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AMERICAN BEE JOURNAL

The Oldest Bee Journal in the English Language

ESTABLISHED BY SAMUEL WAGNER IN 1861

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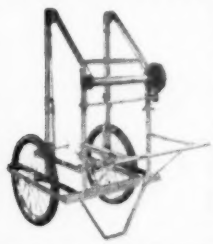

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American Bee Journal

Vol. LXXIX—No. 5 Hamilton, Illinois, May, 1939 Monthly, $1.00 a year

Spring Dwindling

THERE has been much complaint this season about what the old timers called spring dwindling. It is a case of weak colonies that very gradually go down in numbers until in many cases there are too few bees left to maintain the colony.

In years gone by there was much discussion of this common spring condition which then was not fully understood. Some are inclined to ascribe the cause to shortage of stores. A shortage of stores may be a contributing cause but it is only incidental since it often happens in colonies which have an abundance of honey in the hive.

Poor queens or old and failing queens appear to be quite commonly associated with this spring dwindling but at times it happens where vigorous young queens are present in the hive.

In cases where brood rearing stops early in the fall and the bees go into winter with a force of old bees, this condition is likely to follow in the next spring. This becomes especially apparent where the supply of stored pollen is short.

It is rather surprising that it took such a long time for beekeepers to recognize the importance of an abundant supply of stored pollen. Even the best observers among the old masters overlooked this vital element in bee management and it remained for recent investigators to bring it to light.

To avoid spring dwindling make sure that your bees enter winter with young queens, large clusters of young bees and plenty of stored pollen, in addition to ample and satisfactory stores.

—ABJ—

We Need Orderly Marketing

STANDARD quality and orderly grading and marketing are trends of the time where most marketable products are concerned. Honey, which of all farm products benefits least from such attention, ought to be made to conform; otherwise we will find our markets more and more restricted, even as our production grows.

Orderly marketing of honey must be made possible. Because of the quick movement of honey, either by private hands or by carriers, honey has become an outlaw which is quoted by few market reports. This was not the case when honey moved slowly by common carriers, for then it went either into a restricted local trade or through the more orderly marketing channels.

For a number of years we have had national grades and standards for honey. These were established after painstaking investigation, but what percentage of the honey now marketed goes

This month's cover pictures a field of alfalfa at haying time. Within a few years alfalfa has come to be recognized as a major farm crop in the United States and likewise is the source of a considerable portion of the honey which goes to market through commercial channels.

Alfalfa first found its place in American agriculture in the irrigated regions, where it quickly proved its value as a source of hay. The corn belt was slow in adopting it but when red clover began to fail in so many neighborhoods the farmers began planting alfalfa as a substitute. First attempts were not very successful for lack of the necessary soil bacteria, but it is now very generally planted over most of the important areas of farm crop production.

Alfalfa seems to depend almost entirely upon the bees for pollination of the blossoms and in absence of these insects produces no seed. Seed crops have been disappointing in most of the eastern states because the plant yields but little nectar under average conditions. In the irrigated regions of the West the nectar yield is rather constant and seed crops much more dependable.

Alfalfa is a fine example of the dependence of the farmer upon the beekeeper. Without the bees his fields produce no seed. With conditions favorable for nectar secretion, alfalfa yields bountifully; and the bigger the honey crop, the bigger the seed crop, so that both farmer and beekeeper are alike benefited.

Alfalfa came originally from south central Asia and has been carried to most of the important agricultural regions of the temperate zones. As a result of natural adaptation to the regions in which it is grown, strains which manifest peculiar characters have appeared. Thus it becomes important to secure seed of a strain adapted to the peculiar conditions of the locality where it is to be planted.

This crop has not been grown in America long enough to develop this adaptation in many sections. Thus, too often it fails to secrete nectar and for this reason does not attract the bees needed to insure a seed crop.

With proper selection and breeding we have every reason to believe this handicap will be removed and that alfalfa will produce nectar and yield

seed as readily eastward as is now the case in the irrigated regions.

Alfalfa is increasing in importance both to the farmer and the beekeeper, and wherever strains adapted to local conditions have been developed we find farmers planting larger acreage.

♦

We have received three of the new Honey Market News Letters issued by the Economics Department of Michigan State College at the request of a considerable number of Michigan honey producers. The Department hopes that several hundred out of the more than twelve hundred commercial beekeepers in Michigan will act as reporters. This service may be placed on a weekly basis between August and midwinter, it is announced.

As a beginning, reports for the two-week periods in February and the first half of March were submitted by 45, 70, and 63 beekeepers, respectively. The project is surely worthy, and the cooperating agencies are to be commended if they succeed in keeping this News Letter going.

For the first half of February, 105,000 pounds of honey were reported sold; for the last half, 250,000 pounds; and for the first half of March, 110,000 pounds. Not only are these sales indicated, but also the average prices per carload, truck, case, single can, pail, and jar. During the first two weeks in March the carload price obtained by Michigan beekeepers reporting averaged 5.5 cents; the truck price, 4.8 cents; case to ton, 5.6 cents; single can, 6.4 cents; pail, 8.4 cents; jars, 13.4 cents.

An ideal situation would be to have all states organized in this way; it would make possible a conglomerate report that might be included in the Market News Letter issued from Washington, D. C.

Michigan beekeepers who would like to cooperate in reporting for the new Honey Market News Letter (names will in no case be divulged) should address G. N. Motts, Economics Department, Michigan State College, East Lansing.

♦

Inspector Killon, of Illinois, handed us a new one, a razor blade with a picture of a straw skep on the cover of the blade, with the name "Honey Blade For a Sweet Shave," put out by Ficky Products Co., St. Louis, Mo. These blades are manufactured by a "unique electromagnetic process," according to the advertisement. But it is a new one, that name, and won't hurt beekeepers a bit.

out with any grade indicated? If the grades are wrong they should be changed; if they are not wrong they should be used.

When honey sales become so disorganized that regular salesmen acting on fair profits and through the regular channels of trade are disgusted, the number of people who will consider handling honey is bound to be restricted. Jockey trading and a product of doubtful quality tend also to restrict trade and to lower prices.

We call attention in the adjoining column to the Michigan Honey Market News Letter, which is an effort to standardize the product so that it may be depended upon and to interest buyers, salesmen, and handlers. (This Michigan hopes to do, but it can succeed only where its own honey is concerned. Simultaneously will come the tendency for other states to encroach upon Michigan by shipping honey into the state. Similar action, therefore, should be taken by other states or we may have a progressive, orderly honey marketing state trying to reserve to itself its own honey markets.) Success, therefore, should attend the Michigan effort. The more their action can be emulated by other states, the greater will be Michigan's chance of success and, consequently, of establishing a national standard for honey.

Certainly on account of the wide variety of flavors and aromas of honey in nature, the honey industry has a problem in standardization. But it is a problem which must be met.

ABJ

New Outlets for Honey

WITH the increased pressure for consumer attention which modern advertising has developed it is highly important that honey producers keep step with other industries in seeking new outlets for our product. So little has been done in this direction that we have fallen behind other agricultural activities.

Who would have believed it possible to make a substitute for wool as a by-product of the dairy industry yet we hear that it is now possible to make a very good substitute from the casein in milk. The durable enamel which has replaced paint in the finish on Ford cars now comes from the oil of the soy bean. These things bring to attention the need of research in the uses of honey and beeswax.

There has been some enquiry recently as to the value of honey as an ingredient in prepared stock foods. Apparently nobody knows whether it might find an economical place in such formulae. There have been reports that in Japan honey is used as food for fattening fish and a few cases are on record elsewhere of honey fed to pigs or other animals. So far as we know there is no definite information available as to whether the gains have been sufficient to justify a profit-making price for the honey.

Stock foods are now produced in enormous quantity and if it can be shown that honey can profitably be used in such prepared foods it will open an outlet for a large volume of our low grades.

The total production of honey is relatively small and some new outlet which would consume a large volume might very readily take all the surplus and thus insure a more stable market. Large sums are now spent in research by our public experimental institutions. If the beemen are sufficiently awake to bring their needs to the attention of the right agencies, something will be done.

Saving the Bees From Poison

WITH all the agitation about the loss of bees from the spraying of fruit trees there should be much interest in a suggestion offered by William L. Heuser, of the Indiana Heuser Orchards, in the March issue of American Fruit Grower. Heuser suggests that the fruit grower needs the bees, and asks that they give the beekeeper a break and not poison the bees.

He states that in the Heuser orchards a repellent is used on the petal fall spray which serves the purpose. For nine years he has used one pint of crude carbolic acid to every one hundred gallons of spray material. This serves to keep the bees away from the blossoms of the fruit trees which may yet remain open and from the flowers of the cover crop on which the spray material may fall. That amount of acid he states will do no injury to trees, leaves or fruit.

Losses from spray poisoning have become so serious in many localities that beemen are moving away from the fruit districts. If the problem can be solved as easily as Mr. Heuser's report indicates it would seem that there should be a general effort to secure the general use of such a repellent.

—ABJ—

Demand and Price

THERE has been much anxiety expressed on the part of honey producers because of the low price that has prevailed of late. As outfits become larger and volume becomes greater the natural effect is to depress the price of the product. There is a constant effort to expand volume to make up for the drop in prices in order to maintain a satisfactory income.

One very wholesome effect of the drop in prices is to open many new outlets for honey. Honey is going into channels that would not be available at higher prices and this increased demand will serve to prevent the accumulation of a burdensome surplus. Once these newcomers to the market become accustomed to the regular use of honey they are likely to continue its use even though there is an increase in price.

—ABJ—

Origin of One-Piece Section

IN this country the credit for the one piece section has very generally been given to J. Forncrook, an employee of Lewis and Parks, of Watertown, Wisconsin. A picture of this section with grooves to permit folding was shown in Gleanings in February 1879.

We have every reason to believe that Mr. Forncrook developed his section without knowledge of the fact that a similar section had been developed in England by James Lee. Mr. Lee's section was exhibited at the Kensington show of the British Beekeepers' Association about a year in advance of the time of Forncrook's invention.

An account of Mr. Lee's invention appears on page seven of the British Bee Journal of January 6, 1887 and furnishes a very good example of the familiar fact that many new developments are carried on by men who are ignorant of the work of others in the same field.

In a recent issue of "The Glass Packer" in its department on "Timely Technicalities," there appeared a one paragraph article entitled "Glucose in honey."

The first sentence of this paragraph reads as follows: "Honey, which may be regarded as a saturated solution of glucose in a fructose syrup, may be analyzed directly for both constituents."

This, of course, to the beekeeper and honey producer, is like "shaking a red rag at a bull." Far be it from us to have anybody even assume that glucose is in any way connected with honey.

There is, of course, an explanation of a kind. Commercial glucose, which is the glucose we think of ordinarily, is made by a conversion of starch through chemical reaction of an acid. Such glucose never has seen honey nor will it under ordinary conditions, since the Pure Food Laws prohibit such a mixture unless properly labeled.

The less known definition of glucose is the one usually accepted by the medical profession and means "dextrose."

Naturally, here is where The Glass Packer suggested that honey contained glucose. Honey does contain dextrose as one of its component parts.

Undoubtedly, the magazine did not consider for a moment the implications that were contained in their short article or they would not have made them. It does seem, however, that when they submit a definition, they should at least give an industry like the honey industry the benefit of all doubt and refer to glucose only as that product which we know commercially.

♦

Ethel Coon, Librarian for the Bee Culture Laboratory at Washington, D. C., is to spend a month or more at Madison, Wisconsin, continuing cataloging and rearranging the Miller Memorial Library.

Such cooperative efforts are, indeed, a fine thing. No doubt the Field Station of the Bee Culture Laboratory located at Madison is going to allow the finest type of cooperation, between the University of Wisconsin, the Miller Memorial Library, and the Bee Culture Laboratory at Washington.

In that library, we have one of the finest and most comprehensive collections of reference material on beekeeping that there is anywhere in the world.

♦

You are a pretty cheap guy to stake yourself on a two-bit queen.
F. B. Paddock in Kansas.

Comb Honey

By E. M. Cole,

Iowa.

THE article by Charles Mraz on comb honey [March, 1939] and the question in regard to the use of partly drawn sections prompts me to make a few remarks on producing it. I write only for the beginner or for those without much experience in comb honey production. The old hand at it has probably solved his own problems and may know more about comb honey production than I do, but for the benefit of the beginner, I can assure him that many of the problems he will face have never yet been solved to the satisfaction of most producers.

First, use all those unfinished sections you can get, up to a full super, if possible. Even if they are somewhat stained and darkened, you will find them a great help in getting bees into the supers and thus an aid in keeping down swarming. Clean them up as best you can and put them on next to the brood chamber. When they are finished you may find most of them look pretty good but that the comb is rather tough eating. However, you ought not to have difficulty in disposing of them, either by selling at a discount, putting them on your own table, or giving them to the neighbors near your bee yard. Later I shall try to tell you how to get them less tough in the comb and with but slightly stained section wood.

You cannot produce comb honey to an advantage without strong colonies with good queens; a moderate colony that will give you a pretty fair crop of extracted honey in the latter end of the honeyflow will only be a disappointment in comb honey.

In this locality, white clover, if we have it, may be expected to begin yielding the last week in May or the first week in June, so we bend every energy to bringing each colony to full strength at that time. If you succeed in bringing all your colonies to full strength in time for the honeyflow, whenever it may occur in your locality, you will have done something most of us fail to do, except rarely.

If some colonies are weak, you may help them along by equalizing your colonies in May, taking a frame of brood and bees (leaving the queen at home) from the strongest colonies and putting it, bees and all, in a weaker colony, just outside the brood nest.

You may get them all up to proper strength; but if, at the opening of the flow, some are below standard, try this plan. You may have colonies of ten, twelve, or more combs of brood; take away all brood from the best colonies down to nine frames, and give it to weaker colonies until as many as possible have nine frames.

If you still have some five, six, or seven-comb colonies, take brood from the weakest colonies, leaving them with only one well-capped frame of brood (being careful to leave the queen), and bring as many more up to standard as you can. These one-frame colonies will make good colonies for next year and may give you some extracted honey if you have a fall flow.

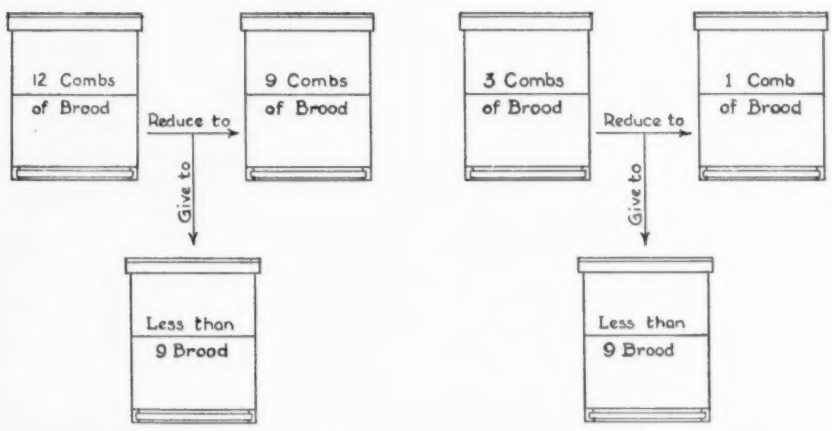


Diagram of the author's plan for equalizing brood.

You may not want to try equalizing colonies in May. If not, just have the colonies as strong as you can at the opening of the flow, and then take from the weakest and build up as many as possible to full strength. Do not be afraid to reduce some to one frame of capped brood; for you are only concentrating your working force, a necessary thing in producing comb honey.

It will help if you move all weak colonies away to another part of the yard when the flow opens, thus throwing as much of the worker force into your comb honey colonies as possible.

You may be able to tell in advance that the white clover will fail and that there will be no flow until sweet clover. If so, just let the bees continue to build up and make all you can of the sweet clover flow.

We shall assume, though, that you have a white clover flow, and just here is when your bait combs of unfinished sections are of value.

Be sure to get them on before the flow starts or your bees will start storing in the brood nest and crowding out the queen, also making it harder to get them started above.

Before going on, let us talk a little about queen excluders and foundation starters. I have always used five-eighth inch starters, and this necessitates a queen excluder, otherwise, you will get more drone brood above than you will comb honey. No doubt the queen excluder is also a honey excluder, but little, if any, more in comb honey production with plenty of bait combs above, than in extracted honey production. This year for the first time I will use full-sized starters, and for this reason: The finished section of honey built of drone comb just cannot compare in beauty of finish with a section built of worker comb, and beauty of finish is the one main selling point in comb honey.

I have read, and I believe it, that with full-sized starters you do not need a queen excluder, as there is no drone comb to call the queen above, and if she starts in above she does not like the constant interruption the section sides make in her laying circle. As for the size of the section hindering the worker bee, I doubt it. A 4¼ section is a mansion in size to the worker.

I think I can tell you how to have

your sections filled and off at the close of the season with practically no dark or travel-stained comb.

When you put on the first super of bait combs, put on top of it a super of sections filled with foundation. As soon as the super next to the hive is well started, say half full, lift it off and put the empty top super below, and put the partly filled super on top, then on top of this put a super filled with foundation. Continue this all season, raising them up as soon as the super next the brood nest is half filled and putting the top empty super below. Thus you will not have capped sections next the brood nest to be travel stained, and your finished section will be near the top, easy to get off. The empty super always on top provides shade, ventilation and extra room in case of a sudden extra honeyflow, or some neglect on your part.

You may think this requires a good deal of equipment. Well it does, but you cannot produce a good crop of honey without plenty of equipment.

You do not need enough supers to hold the entire crop, but you do need enough that the bees still have plenty of storage room when you take off the first supers of finished honey. If short of equipment, keep fewer colonies and invest in equipment. It will soon pay for more bees and pay for itself too.

When the first honey is ready to come off it is not necessary to leave it for every section to be completely capped. The bees may start to propolize it and darken and toughen the comb. Take off, sort out and return the unfinished sections to the bees. If you have a number of colonies you may have a super of these, or nearly so, but no matter how many you have, get them right back on the colonies. Don't wait a single day. In warm, dry weather this uncapped honey continues to thicken and ripen. If this goes very far the bees will refuse to draw the comb out any deeper and cap it over as it is, thus giving you a thin, rough, unsightly section.

Get all finished honey away from the brood nest and off the hive as soon as possible, and all off as soon as the honeyflow is over. If you do this, you will have no cause to complain of stained and darkened sections.

You may find more complicated methods of tiering up supers for the honeyflow, but none that will give you more honey in nice, white sections, or fewer unfinished ones, and these unfinished sections I hope to tell you how to turn into nice finished eatable comb honey when you use them next year for bait combs.

Let us hope you have plenty of them for, as G. M. Doolittle once said, "they are better than money in the bank."

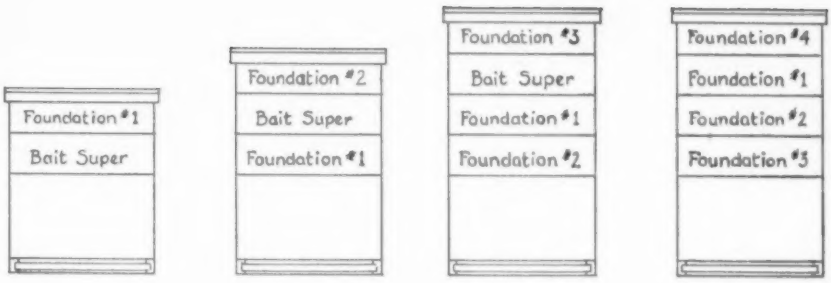


Diagram of the author's system of supering colonies for comb honey production.

They must be uncapped, even the cells that are not capped should have the outer rim shaved off, and a good sharp uncapping knife will do this. If you do not trim the uncapped cells you will find the comb toughened next year when you try eating your section of honey.

Sections are easily uncapped once you get the "hang" of it. Take a section in your left hand, the edge of the section toward you, and a knife in the other hand, twist the section toward you and the knife away from yourself, bring the point of the knife up to the face of the comb and just twist knife and section in the opposite direction. You can uncap and trim nearly all cells at one stroke.

To be at their best for next season's use sections must be emptied out until clean and dry. If you have an extractor, make a frame that will hold eight sections and slip down into the basket. After extracting, place them out in the bee yard to be robbed out, cover tightly and as you will have but a few, allow only a half-inch entrance and the bees will clean them out nice and dry.

To prevent trouble put them out near the bee yard about a half hour before sundown and leave them until the bees have cleaned them out completely and have quit nosing around.

If you have no extractor, set them out anyway. It will only take longer for the bees to empty them.

Do not put them on top of a colony, for the bees will be too slow in cleaning them up and will start at once to give them a coat of propolis which darkens and toughens the comb.

When thoroughly cleaned, wrap them up, to keep out dust and light, and you will have bait sections that will give you nice white comb honey next year with only the wood a little darkened.

A word in closing to the beginner: Beware of investing much in comb honey equipment until you are sure of a market. It sells slowly in competition with extracted honey, and while some people will continue to buy only comb honey, it is doubtful if it ever again has a heavy demand.

As to the amount of comb honey a colony may produce, you will frequently read that a colony will produce nearly twice as much extracted honey as comb honey. Yes, from weak or moderate colonies, but a colony of bees in proper shape for the flow and with plenty of bait combs will produce as many finished sections of comb honey and often more than it will pounds of extracted honey.

———ABJ———

The Bee Space

Father Langstroth hit on the proper bee space as ⅜ inch. After seven years in Maryland in the country west of Chesapeake Bay, I am inclined to think that in this humid climate a wider bee space is an improvement. Three-eighths of an inch would suit Arizona with its dry climate. Chesapeake Bay needs about seven sixteenths of an inch or more, possibly one half inch, between the wood surfaces inside the hive.

I am sure about the need for a deep bottom board—two to two and one-half inches, for ventilation and swarm preventions. Our honeyflows comes early. Last spring the flow started March 15 and pollen was available February 10. The winter was so warm that brood rearing started January 1, causing the loss of many queens and ruining many colonies. Abnormally early brood rearing seems to cause drone layers. I would like to hear from others on that point.

What do you think about the proper bee space in different sections of the country? Is there a practical way to slow up very early brood rearing? No one can know beforehand what the winter will be, so the problem is difficult.

Edmond Fontaine,
Maryland.

———ABJ———

Oh! Oh!

There are two main handicaps to honey production—foulbrood and the beekeeper.

F. B. Paddock in Kansas.

Don't Wait For the Count

By E. Playfair Harrison,

Canada.

A beekeeper may be down but he is not necessarily out, even if he has lost as high as 60 per cent of his entire apiary with American foulbrood. When the first reactions die with the flames of the inspector's fire, no matter how varying the circumstances or seemingly unjust the treatment, he must plan to build up again or quit.

To me, a beginner, the loss of so much new equipment, together with the hopelessness of sterilizing thousands of frames and hundreds of supers, was so staggering, it took me months to make up my mind to tackle the job. It really wasn't made up until a neighbor beekeeper dropped in with the helpful suggestion that if he were in my place, he'd just set a match to the rest of the apiary supplies and let it go at that. It took just that statement to stir me into action. I was then determined to go on. My loss of frames, honey, bees, and wax had made the buying of any new apparatus for water sterilization prohibitive. I must find a way out without any further expense and the job must be thorough. I could never stand another inspector's fire.

In early September, I began by killing off the remaining hives of bees and gathering all the equipment into the home yard, being careful not to overlook even one bottom board. All wax was then cut from the frames and melted down. This was at once shipped to the city to be manufactured into foundation for the spring. All water used in processing this wax was buried, because when wax melts at a very low temperature, it is possible for foulbrood to live over in this to cause further trouble.

Every pound of honey was sold and nothing was left to chance with the remaining dark or dirty honey. The former was used in the home early in the winter and the latter was safely buried in the garden.

Next came a thorough cleaning of the honey house. I sterilized all tanks, extractors, pails, etc. It was then I decided to use a five hundred pound settling tank for a boiler. This tank had been made locally and had never been entirely satisfactory. In the center of the bee yard I had the men dig me a trench two feet deep by two feet wide by six feet long. Over this narrow ditch-like hole, they placed two iron bars, strong enough to support this tank almost filled with water. A fire was then started under the tank. With the heavy sod removed while digging this fire box they constructed me a chimney base at one end of the trench. On this base I piled four supers, making an excellent chimney.

We immersed the frames in boiling water. They were so arranged that as large a number as possible could be boiled at a time. These were held under the water by a weighted lid and boiled for twenty minutes, not by guesswork but by the alarm clock that hung in a nearby tree.

All the time we were keeping close watch on the supers serving as a chimney. They were turned and moved up or down until all were thoroughly scorched on the inside. They were then replaced by four more. This was quick work with a good fire.

As soon as the frames were removed from the boiling water, they were packed at once into the scorched boxes to prevent warping. Everything was then stored away to be painted at our leisure.

Probably the most tedious job of all came with the scorching of each top and bottom board, over the trench fire. Then as a last precaution the water from the tank was disposed of in the fire box before it was finally filled in with earth.

Lastly the yard was carefully raked and burned over in case anything was missed. This work of sterilizing three thousand frames and four hundred supers, together with tops and bottom boards has been accomplished in four days with the help of one young girl, aside from the part played by the men in digging the trench and supplying us with fire wood.

In April, the following year, one hundred packages of bees were introduced in this equipment on plain foundation and fed with sugar syrup. I had been sorely tempted to buy drawn comb to give them a better start but I was so anxious to know the results of my work, I did not.

The spring build-up was naturally slow. Late June came at last. The zero hour with the inspector's yearly visit. I didn't even go into the home yard with him but remained indoors for the verdict. Finally he came. He spoke as if he could not quite believe his own words. "I never found a cell of foulbrood and I have gone over everything very carefully." It was like being handed a check for a hundred dollars.

That was the summer of 1936, I had inspection again in the fall of that year and again in 1937 and still there is no trace of the dread disease. It had not taken any outlay of cash to clean up but it had taken careful work.

With this success, there quite naturally came the question. Why could not the government inspector's fire, in the first instance, have been burned under the boiler instead of in a pit in the ground? Is it not as easy to boil as to burn? Any beekeeper would gladly bear any necessary expense of this.

If the former method was used instead of the latter, we would never be in the position we are today with American foulbrood. One class of beekeeper today is bearing the brunt of a battle against a disease, that will never be won, as long as the other class will continue to hide their diseased equipment until after the inspector's visit.

There is something so repugnant to the fire method, it does not seem to be doing the job of ridding our communities of the honey producers' worst enemy, American foulbrood.

———ABJ———

Cheap Bee Feeder

Take a tin fruit can; cut one end out; dent the other end outward, and punch a hole in the middle outward with a sharp instrument; not too big, but so syrup will drip through slowly. Place this can, the hole covered with cloth and the can filled with syrup, over the open hole in the inner cover. The bees will do the rest.

F. W. Walrath,
Iowa.

———ABJ———

Price?

J. L. Hudson Co., Detroit's real department store, sells a Dripcut, filled with California orange blossom honey, for $1.69. That makes the honey seventy-five cents a pound. What a price! W. E. Becker.

[Anyway, it's refreshing to learn of honey selling at the other end of the scale.—Ed.]

Fighting Foulbrood

By Leroy F. Baxter,

Nebraska.

YOU no doubt remember the stir that was created a few years back when Hutzelman came out with his alcohol-formalin solution for the treatment of combs containing American foulbrood infection. The bee journals showed pictures of combs before and after treatment, and some beekeepers even went so far as to buy up diseased stock. We thought then that we had a sure cure for the worst cases of foulbrood and that in the future the disease would be of minor importance, since it had become an easy thing to eradicate.

But no. The trouble was that sufficient time had not been given to determine fully the efficacy of the treatment. We didn't know then that some of the germs could lie dormant in these same treated combs for a year and even two years and then cause the disease to develop again. It was quite some time before I could make myself believe this to be true, but so many converging circumstances in recurrence of the disease in treated combs have demonstrated that the Hutzelman "cure" was quite ineffective.

This dormant characteristic of foulbrood in treated combs, which fooled us with the Hutzelman solution, is what renders treating methods of little value. For one can never be absolutely certain that his combs have been completely sterilized.

On account of its cost, I never used the alcohol-formalin treatment, and I used very little of the water-formalin. Practically all of my experience has been with formaldehyde gas.

When a certain well-known queen breeder came out with his new method of formaldehyde gas treatment and made sweeping claims for its efficiency and ease of application (claiming that American foulbrood no longer held any terror for him), this sucker fell for the bait—hook, sinker, and bobber. Unlike the liquid treatments, this method was not disagreeable to handle; and, according to the originator, it was so easy and sure of succeeding, that I started in to make a wholesale cleaning up, without questioning anything.

I made a cleanup, all right, but it wasn't foulbrood. The formaldehyde poisoned the combs and killed practically my entire stock of bees when they were placed on them that fall. The next spring $1,200 worth of package bees were placed on these same treated combs, only to suffer pretty much the same fate as the first bees did.

If, after killing my bees in the experiment that fall, I had only gone ahead and melted up every comb that I had and started out the next spring by placing package bees on foundation, I would have got a honey crop, saved the package bees, and done a wise thing in getting rid of my old infected combs. But by saving the treated combs. I also kept the disease with them and so was worse off than I would have been if I hadn't touched them.

Many a beekeeper will consider his yard an experiment station to find this new immune strain of bees we hear so much about. I do not condemn research work for this ideal, but the ordinary beekeeper is not qualified or equipped to do it, and the chances are that he will relax his vigilance and forget to fight foulbrood. I have had a few cases in which the bees apparently rid themselves of the disease, but such cases are rare exceptions. I am not attempting to develop a strain of immune bees, and generally where a suspicion of disease is found in any colony, the second examination a week or two later will remove any doubt about what to do with it.

The basis of all my fall shaking of bees has been the assumption that the disease could be starved out of bees in the fall, after brood rearing had ceased and the honeyflow was over, thus avoding the loss of honey one always has to suffer when shaking is done during the honeyflow. In this way the bees could be saved without wintering the disease and shaking the colony the following spring on foundation. I have always shaken on foundation before the bees have stored much in the supers, but I have never reached the idealism where I felt free to destroy from 50 to 100 or more pounds of honey on a colony just because a few dead larvae showed up at the close of the season.

This fall shaking was always done after the clean colonies had been taken out of the yards, preparatory to putting them in the cellars. When we started to fall shake our bees a few years ago, we confined them to their hives by screening the entrances and tops after shaking the bees off their brood combs. We thought forty-eight hours would be ample time for them to consume all the carry over of infected honey if we didn't feed in the meantime. If the weather was warm, we lost many colonies from milling around and wearing themselves out in confinement. We have kept these colonies off combs for from forty-eight hours to seven days, but after forty-eight hours we have always fed a little sugar syrup by pouring a few ounces over the cluster. We have shaken a great number of colonies in the fall and have done it in every way we could think of but never with complete success. Some were starved so long that they died, and these we were sure had got rid of the disease. But no matter how long they were starved, whether confined or not confined, whether placed in sterilized hives or left in their old ones, we have always had a surprisingly large carry-over of disease. The fall shaking has never been as successful as shaking on foundation in the summer.

Of course, one can never be absolutely certain that "recurrence" is not a new case contracted from an outside source. However, one can make a pretty good guess by the amount of disease found in the rest of the formerly clean colonies. Very often this recurrence will not be apparent until late in the season and sometimes not until the following year. This is also more or less true of colonies shaken on foundation. However, we find that shaking on foundation in a good honeyflow is much more reliable. In either case the rottener the colonies are, the greater the likelihood of carry-over.

I am strong for inspection work, because it is hard enough to have to fight disease from within without being infected from neighboring sources. In one yard we got over a 50 per cent infection from one neighbor in colonies that had a two-year record of freedom from disease.

In future seasons by efficiently continuing with the inspection work, by cyanide and the melting pot, we hope to reduce the occurrence of disease to 5 per cent, at the most. But if you want 100 per cent efficiency in treatment of American foulbrood combs, there is only one way to get it—burn them up.

[The author's method for steaming diseased combs from frames, leaving the frames and wires intact, to be used again, was given in American Bee Journal for August, 1937. —Editor]

Portable Extracting Outfits

HONEY GETTING

By E. L. Sechrist,

Tahiti.

THE portable extracting house is used with a carrying tank mounted on a truck. It is seven feet six inches by thirteen feet, and is six feet high, in the clear, at the eaves, with curving top having a rise of eighteen inches at the center. The sides are of boards to the height of three feet, with screen above that. It has let-down canvas flaps fastened with automobile curtain fasteners, in order to close the outfit tightly when it is being moved from place to place. This is necessary to keep the house free from dust. Both sides and also the rear end of house are screened. The house is mounted on a trailer and has, between the sills under it, a flat tank holding 175 gallons and is of a size and shape as shown in the drawings. On the truck which pulls the portable is a round tank holding 375 gallons, thus giving the outfit a tank capacity of 550 gallons, which is not likely to be exceeded in a day's run from an apiary of 100 colonies.

The end of the portable opposite the extractor has a full sized door with screen top, uniform with the side of the house, with hasp and padlock, also a hook on the inside to fasten it shut. This end also has a small, solid, slide door, to drop down, through which supers are passed in or removed.

Full supers, freed from bees, are brought up on a wheelbarrow and pushed in through this slide door which, when closed, is fastened by a cupboard catch on the outside. A slight kick against this door on the inside, also frees this catch and permits the door to drop down. It is of importance, for quick work, that this door be capable of being opened quickly both from inside and outside, and that it should drop down instead of having to be pushed aside or raised. A hook on the inside fastens it shut firmly when desired.

As supers are pushed in through this door they slide toward the extractor on two small iron rods fastened to the floor fourteen inches apart. These rods are merely bent down at right angles at each end, extending through the floor, thus being kept firmly in place. Rods one-quarter inch in diameter are large enough.

The supers are then taken by the inside workers and set into trays or pans in locations convenient for the uncapper. These trays are merely sheets of galvanized iron turned up an inch at each edge. They catch the drip from supers and help to keep the floor clear of honey.

There is sufficient room in this portable to pile up some extra full supers so that, if there happens to be some delay in taking off supers, the work of extracting is not stopped immediately as is the case if a portable is made so small that no supers except those being worked on can be taken inside. On the other hand, this additional super room on the inside permits taking off supers in the apiary to continue even during a period of cessation of work in the house. This seems to be a necessary thing—a sort of safety valve which prevents holding up all operations because one part progresses too fast or too slowly.

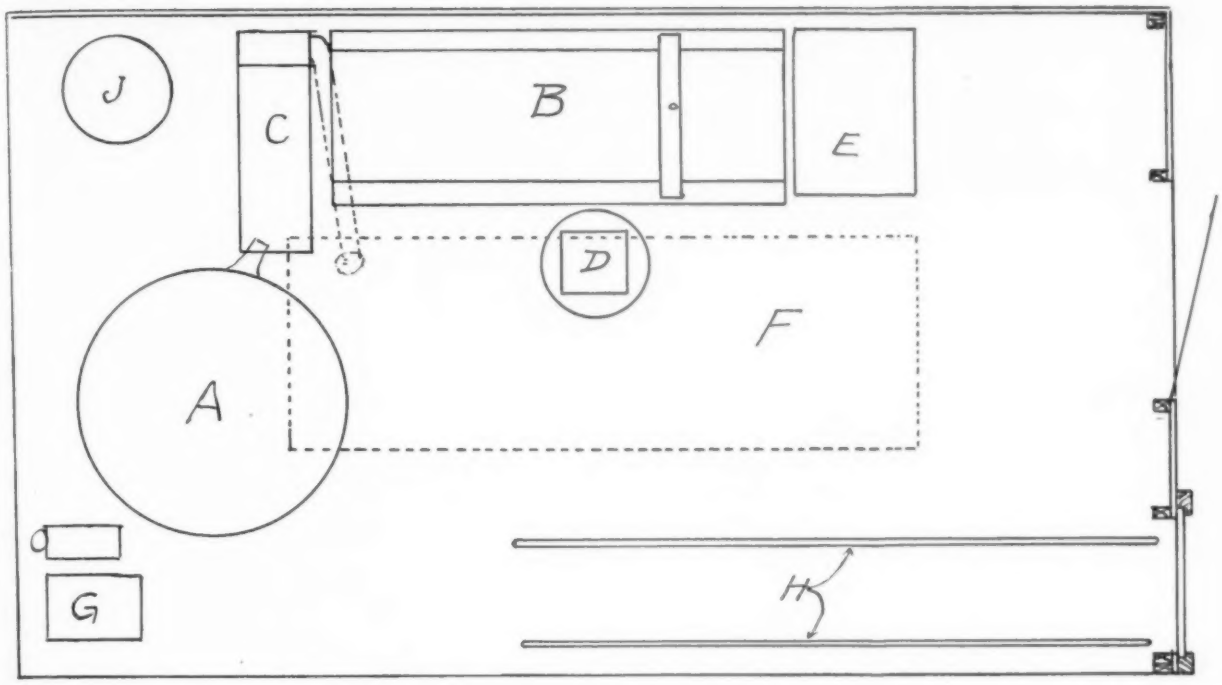
As soon as they are extracted, empties are set over on the slide rods, although far enough from the door to permit full supers to be slid in by those working outside. Then, when a wheelbarrow load of full supers has been passed in through the door and set over beside the uncapping box, the empties on the rods are slid toward the door where the men on the outside can reach them easily.

Empty combs, when taken from the extractor, are laid on the extractor can and cross bar until the extractor is refilled and running, when they are taken up, four at a time, between the two hands, and replaced in empty supers on the slide rods, thus keeping the extractor idle a shorter time than if the combs were placed two at a time directly from the extractor into the supers. For speed in this work, an eight-frame extractor is desirable and eight frames are used in the supers. If local conditions make it necessary to use nine frames in a super, a little time is wasted in handling the extra frame.

An uncapping box two by five feet is used. Above its iron bottom, which is sloped to drain to the strainer, is a removable false bottom of one-fourth inch mesh hardware cloth on a strong frame. The drained cappings are melted later at the central plant. A capping melter can be used if desired, steam being already available.

If the uncapping box is made with an inward sloping board on each side instead of the usual flat strip, honey will be less likely to drip on the floor; and a wide, sloping, sheet metal guard at each end of the box to catch wax flying from the knife will help to keep the floor free from bits of cappings. It is also a convenience to have a one-fourth inch iron rod fastened lengthwise of the sloping side strips of the box, combs sliding more easily along these rods than on the wood itself. The entire top framework of the box is removable and can be lifted off for ease in removing cappings and cleaning the box. On the uncapping box is a small, convenient rack for the uncapping knife which keeps the handle of the knife always at the proper place, when not in use, to be within easy reach of the uncapper. This knife holder may be made of a short piece of rubber belting, and the drip from the knife may be caught in a tin, or may be conducted through the floor. Small conveniences like this make for speed and ease in working as well as for cleanliness. Various tools and necessities are hung around the inside of the house on the plate at the eaves or in other convenient places. Some of these tools are: funnel, leather-loop can wrench, hammer, Stillson wrench, soldering iron and outfit, canteen of drinking water, broom, shovel.

As the warmed honey runs from the extractor, it goes into a strainer box, two feet six inches long, ten inches wide, and six inches deep, in which rests a window screen basket which is drained and the contents emptied into the capping box when necessary, or removed and replaced with a fresh one, while the first clogged with cappings and bits of comb, is stood in the uncapping box to drain and empty. A partition near one end of this box reaches nearly to the bottom, while the honey outlet, near the top of the box, at the same end, causes the screen always to be immersed in the honey, preventing it from clogging quickly as it would if the honey outlet were at the bottom of the box. It is possible



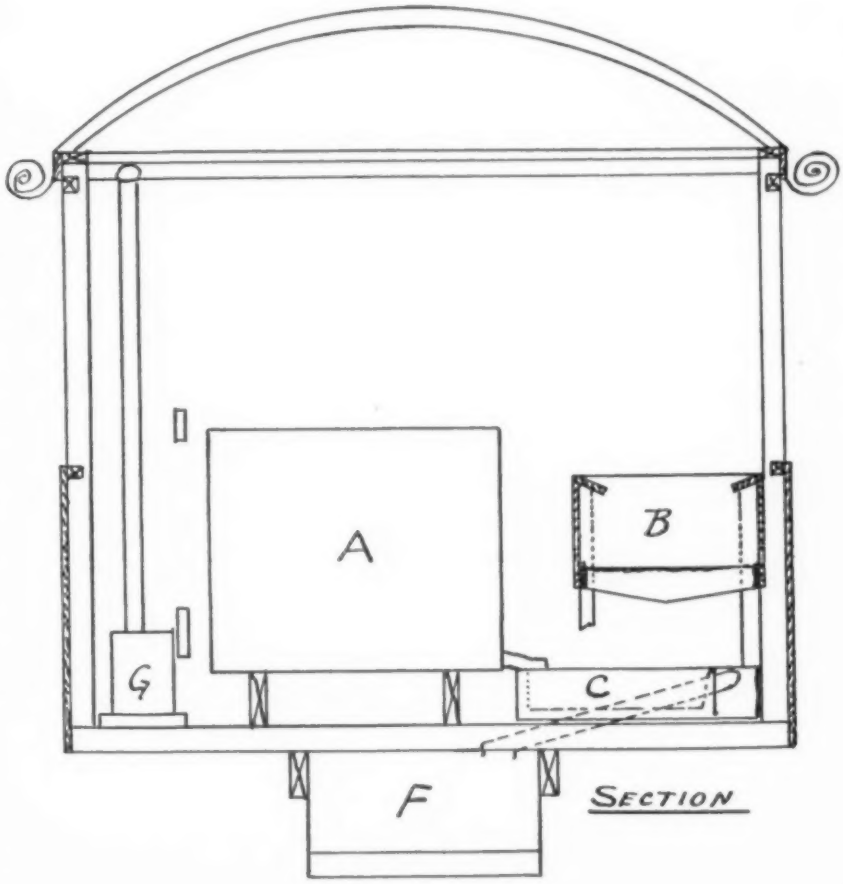
Floor plan (above) and elevation (below) of the portable extracting house. Key letters may be interpreted as follows: A, extractor; B, uncapping box; C, strainer; D, supers uncapping; E, supers waiting; F, 175-gallon sump; G, engine and honey pump; H, rails for sliding in supers; J, boiler.

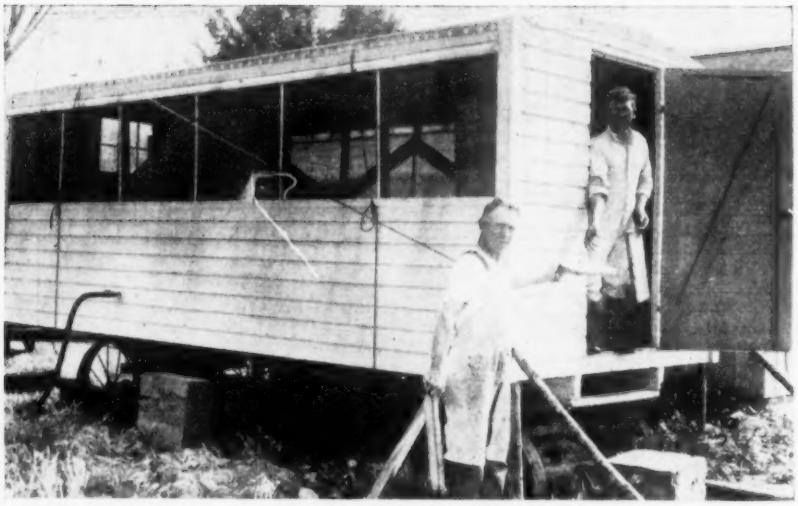
to strain the warm honey through a cheesecloth supported on a second and larger mesh screen placed below the first one, but the straining capacity may be somewhat less than when only the wire screen is used.

From the strainer, the honey runs into the sump beneath the floor. From this 175 gallon tank the honey is pumped by the same engine that operates the extractor, the pump being started only when the tank is nearly full and stopped before it is quite empty, in order to avoid pumping bubbles into the honey.

A two-inch iron pipe rises vertically from the pump to a sufficient height. Attached to this riser is a regular gasoline pump hose, long enough to reach from the pipe, through the board above the screen on the rear end of the house, to the tank on the truck; and provision is made, when pumping, for a tight clamp connection between the hose and the tank, so that no bees can enter. This same clamp closes the end of the hose tightly when it is not attached to the truck tank, being then slung up at the end of the house, out of the way.

An air pressure tank of the usual style, is employed to supply gasoline through small tubes, to burners under the extractor and the boiler which furnishes steam for the uncapping knife. This boiler may be the regular copper boiler supplied for the purpose, though a larger boiler is more satisfactory, and is necessary if the honey is to be heated with a coil of pipe in the extractor. Several convenient types of boilers will be described in a later article. To prevent trouble, the boiler should always





A portable extracting outfit successfully operated by T. E. Roberts and J. A. Snell, of Bozeman, Montana. In this outfit the heat was supplied from a boiler set up outside the extracting unit.

be equipped with some kind of a safety valve.

Two men work inside the portable, one uncapping, the other managing the extractor. Two men work outside taking off honey. A bee brush kept in a pail of water is used if the bees are being brushed and smoked off, although there is only occasional use for a brush if bee escapes are used. A wet brush arouses the anger of the bees much less than does a dry brush, besides, the brush being always free of honey, permits faster work.

The tank under the floor of the house is of heavy guage galvanized iron. It is seven feet long by twenty-seven inches wide. It hangs between and is clamped to the two by six inch sills of the house. It is thirteen inches deep with an additional three inches of curved bottom, making it sixteen inches deep to the lowest point of the tank where the outlet is located.

The floor runs lengthwise of the house and is nailed to the four by four inch cross pieces which rest on top of and are bolted to the two by six inch sills. The frame of the house is made from 1¼ inch by 2½ inch dressed studs, two feet on centers, doubled at the corners and bolted together. The plate is also of dressed 1¼ by 2½ inch stuff, and a ⅞ inch by four inch board is nailed on the outside of the plate along the eaves. The canvas flaps are fastened to these boards. 1¼ by 1¼ inch strips are cut between the studs, at the bottom of the four inch boards and the screen is tacked to these. Molding is used to cover all the edges of the screen around the panels.

The supports for the roof are sawed on a curve from ⅞ inch boards and are one and one-half inches wide where they rest on the plates and three inches deep in the middle. The roof may be a tarpaulin or sheet of canvas or thin tongued and grooved ceiling covered with painted canvas or felt roofing; or poultry netting may be fastened on the rafters and tarpaulin or painted canvas stretched over that.

With an outfit like this, 550 gallons of honey have been extracted in nine hours, hauled to the central plant, run into storage tanks and the portable outfit washed clean with a hose, ready to go out again the next day.

—ABJ—

Galleria Mellonella (Wax Moth) or Braula Coeca (Bee Louse)

In the March issue of the American Bee Journal was published an item I sent in regarding the danger of the wax moth in hives before storing in the winter.

It has been called to my attention by Professor V. G. Milum, apiculturist in the Department of Entomology at the University of Illinois, that I confused the scientific name of the wax moth with that of the bee louse. The scientific name of the wax moth is **Galleria mellonella,** while that of the bee louse is **Braula coeca,** both of which are defined and classified in the "A B C and X Y Z of Bee Culture."

Professor Milum says that it has been reported that some samples of **Braula coeca** were sent to the University of Wisconsin from northern Illinois, but that the University of Illinois Entomology Department has never had samples of any living specimens.

The professor also believes that a lot of blame has been placed on the **Braula coeca** for the work of the greater wax moth **(Galleria mellonella),** especially for injury to comb honey, where wax moth larvae gradually grow smaller and smaller, and eventually die, if they don't have opportunity to feed on pollen or brood comb or other sources of protein. Very few men, says Professor Milum, have made a study of this pest **Braula coeca.**

With this evidence, I believe the average beekeeper should not be too severely criticized for a mistaken classification of these infestations.

William R. Koenig.

—ABJ—

A Garden Book

"The Complete Book of Gardening," edited by Leonard Barron, has recently come to us from the publishers, Doubleday, Doran and Company, of New York. One is a bit surprised to find that the price of this 645-page book, which covers the entire field of gardening is only $1.98.

The work is divided into fourteen chapters, written by ten well-known horticultural specialists. One regrets that there is not a page to introduce the reader to these men.

Especially impressive are the chapters on annual and perennial flowers. The average gardener will find them to be worth the entire volume. There are well-selected lists of plants, suited to individual needs, with suggestions for what to plant for bloom at a particular season or in a particular situation. There are selections as to color, selections for the rock garden and for sun and shade.

The chapter on trees and shrubs is evidently written with eastern conditions in mind, and the reader should be cautioned to remember that some of the plants mentioned are unsuited to midwest climates. However, it is not easy to prepare a volume suited to every section of a vast area with so great a variety of environmental factors as occur in the United States.

There are chapters on such special favorites as roses, delphiniums, lilies, and bulbs. Comprehensive instructions are given for the making of pools and rock gardens, and the vegetable garden is likewise treated. With the information about pruning, cultivation, and control of pests, we have a well-rounded volume, particularly suited to the needs of the novice who loves a garden.

Tested Recipes—

Burnt Sugar Honey Cake
Spanish Chocolate Honey Cake

By Grace Hohmann,

Iowa.

Burnt Sugar Honey Cake

¾ cup shortening
½ cup honey
1 cup sugar
2 eggs
1 tsp. vanilla
2 tbsp. burnt sugar syrup
1 cup milk
2½ cups cake flour
2 tsp. baking powder
½ tsp. soda
½ tsp. salt

Cream shortening, add honey and cream again. Add sugar and cream again. Add eggs and vanilla and cream again. Combine milk and burnt-sugar syrup and add alternately with flour which has been sifted with baking powder, soda, and salt. Beat until smooth. Bake in 2 greased and floured layer pans in (375°) oven about 25 minutes.

Seven Minute Honey Frosting

1½ cup sugar
5 tbsps. water
1½ tsp. honey
2 egg white

Combine in double boiler and cook seven minutes or until it will stand up in peaks. Beat constantly while cooking.

Spanish Chocolate Honey Cake

½ cup shortening
½ cup honey
1 cup sugar
2 eggs
½ cup cocoa
½ cup hot water
1 tsp. soda
1 cup sour milk
½ tsp. salt
2½ cups flour
1 tsp. vanilla

Dissolve cocoa in hot water and let stand in a cool place. Cream shortening, add honey and cream again. Add sugar and cream again. Add eggs and beat well. Add the dissolved cocoa and beat until well mixed. Combine sour milk and soda and add alternately with sifted dry ingredients, starting and ending with dry ingredients. Bake in two greased and floured layer pans in moderate oven about twenty-five minutes.

Boiled Honey Icing

2 egg whites
1½ cups of sugar
½ cup water
1½ tsp. honey

Combine sugar, water, and honey and boil until it forms a hard ball in cold water. Then add to stiffly beaten egg whites. Beat until almost cool and spread between layers and on top and sides of cake.

IF you have a favorite honey recipe we will be glad to test it for you. If it has general appeal and works as well for us as it has for you, it will be published. These two recipes by Miss Hohmann were tried in our kitchen and the pictures are of the cakes as they actually appear. You may use these recipes with confidence that the results will be satisfactory.

A Hot Water System for Heating Honey

By Edwin J. Anderson,

Extension Apiarist, Pennsylvania State College.

A number of electric heating chambers have been built or designed for the purpose of heating or liquefying honey and rendering beeswax. Also, a pan has been made for heating honey coming from the extractor so that the honey would run through a fine mesh screen.

This summer a demand for similar equipment came from a beekeeper who lived in a district where electric current could not be had. In order to meet his needs, equipment was designed which could be used with a coal burning hot water heater.

The equipment built will liquefy crystallized honey, render beeswax, or heat honey as it comes from the extractor for straining.

Both the large tanks (Figure 1) are made of galvanized iron and are placed in wooden boxes. The upper tank is placed one foot from the ceiling. It is 5 feet long, 23½ inches wide, and 10 inches deep and will hold about 700 pounds of honey. The wooden box which encloses it is made of lumber 1⅛ inches thick. A valve or honey gate regulates the flow of honey to the heating pan below. A float may be placed in the upper tank to show the depth of the honey.

When the tank is about two-thirds full, honey is started on its way into the small pan below. Figure 2 shows a pan that is similar, except that it was made to use electricity as a source of heat instead of coal. Honey flows from the small holes in the small pan into the corrugated pan, where it is heated to the desired temperature. The honey leaves the pan through another series of small holes and runs down a trough and into the straining box.

The heating pan that goes with the tanks is the most complicated and difficult piece to make. It should be built by a competent tinsmith.

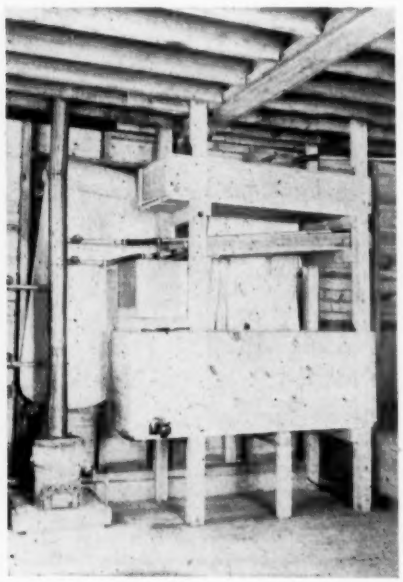
The heating pan is a double jacket affair. The upper part is made of high grade corrugated roofing with the corrugations 1½ inches apart. The plan of construction is as follows:

A pan is made from 20 gauge galvanized iron. It is 54 inches long, 20 inches wide, and 4½ inches deep, inside measure. In one end of the large pan, a smaller pan is soldered. The smaller pan is 20 inches long, 4 inches wide, and 1¾ inches deep. It has ½ inch of extra iron on the top of both ends and one side. This iron is bent over the sides of the larger pan and soldered fast.

Three pieces of strap iron, 46 inches long, ¾ inch wide by 3/16 thick are formed into rectangles so as to be the same length as the inside width of the large pan or 20 inches. They are three inches wide outside measure. The rectangles are strengthened in the center with another piece of strap iron 7 inches long, which is bent to form a U. The U is 2 10/16 inches wide. The smaller pieces are riveted to the center of the large rectangles. They strengthen the rectangles and hold the two ends of the iron together. The rivets are sunk in the strap iron so they are level with the outside surface. The rectangles are then riveted to the sides of the large pan. One rectangle is placed six inches from each end of the open space in the large pan, and the third one in the middle of the remaining space.

The corrugated iron is then cut to fit tightly in the space between the small pan and the opposite end of the large pan. The two sides are bent up ½ inch above the crest of the corrugations. The edges of the large pan are bent over the edges of the corrugated iron before they are soldered. The outer pan overlaps the corrugated iron ½ inch.

Three more pieces of strap iron 26 inches long are bent to form a U. The U is 20 inches long, outside measure, with three inches of a projection on each end. They are placed



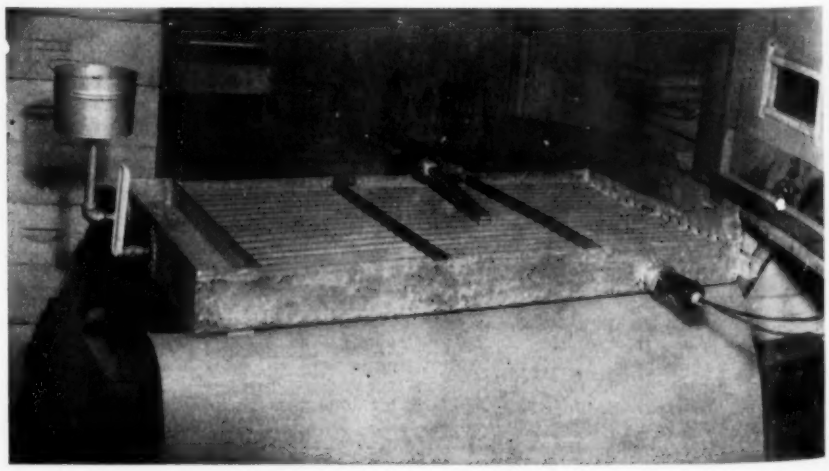
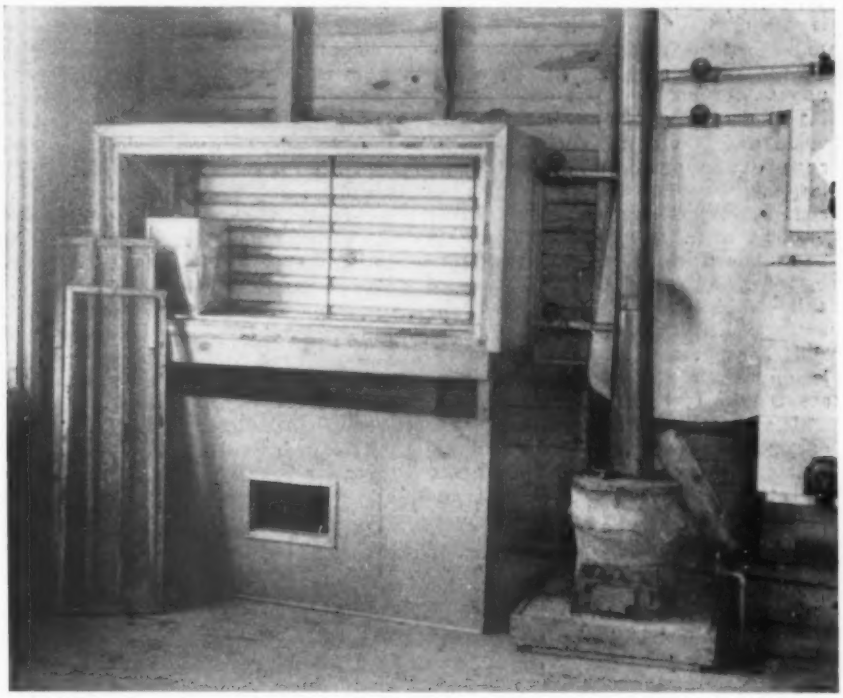


Figure 1 (above) is a side view of the two tanks, heating pan, and strainer. The bucket-a-day stove is at the left.

Figure 2 (right) This heating pan is the same in construction but adapted to the use of electricity.

Figure 3 (at left) The straining box, with one strainer partly removed.
Figure 4 (below) The dry heating chamber, with baffle removed. The trays for rendering wax rest on the floor.



on the corrugated pan and riveted to the sides. They are placed thirteen and one half inches from each end of the corrugated pan and the same distance apart. A small piece of L-shaped galvanized iron is soldered to the top of every other corrugation and to the end of the pan.

A hole 5/16 of an inch in diameter is bored into the small pan about ¼ inch above the hollow of each corrugation. A similar hole is bored in the large pan at the opposite end of the corrugations. The honey leaves the small pan through the first series of holes and is heated as it flows down the hollow of each corrugation. The temperature of the honey as it leaves the pan, may be changed by increasing or decreasing the flow of honey or by changing the slope of the pan.

A trough is soldered below the openings on the outside of the large pan. It is about one inch wide and one inch deep, and slopes toward one end. The honey passes from this trough to the strainer. A valve is placed in the lower corner of the pan to drain the water when the pan is not in use.

An inlet and outlet are provided for the hot water in opposite ends of the pan. The hot water enters the top of the pan. An overflow chamber also is provided to take care of the increased volume of water when it is heated. The overflow chamber is connected to the pan with a 1½ inch pipe. A thermometer is placed in the end of the pan.

Water is permitted to flow into the system until the water begins to appear in the overflow chamber. The water is then shut off. This type water heating equipment is called an open system. A closed system is not used because of excessive pressure.

When the honey leaves the heating pan it passes into the straining box (Figure 3) where it goes through three or four different meshes of Monel metal screen. The first screen has 20 mesh to the inch, the second has 40, the third 60 and the fourth 76. A finer screen may be used at higher temperatures. If a slightly coarser screen is used, satisfactory results may be obtained by placing one to two layers of cheesecloth in front of the finest mesh screen. The last or finest screen takes most of the smallest particles from the honey. When cheesecloth is used with the screen the fibers of the cloth seem to catch and hold the tiny particles in a way that the screen does not. The cheesecloth may be fastened to a small wooden frame with a few nails protruding from the one side. The heads of the nails are clipped off so the cloth will hook over them. The cheesecloth will make any screen more efficient.

A second screen of the finest mesh is provided so it can be substituted for the first in case the first one gets clogged. The straining bnx that holds the screens is 15 inches wide, 16 inches deep, and 15 inches long. The screens are fastened to wooden frames and slide into a groove tightly so that honey cannot pass around the ends. The corners of the wooden box should be made to fit tightly to prevent honey from leaking out. The corners should also be reinforced on the outside with galvanized iron so they cannot expand in any way.

Three outlets should be provided for the straining box. One at the bottom to drain the box after all the honey has passed through, and one at the top to carry the honey into the tank in case the box gets full and runs over. The third is the outlet for the honey when the box is in use. This opening is 1¼ inches in diameter and is placed 3½ inches from the top. This arrangement keeps the lower part of the screens immersed in honey so they are more efficient.

From the straining box, the honey goes down a trough to the storage box or tank. The honey is then ready to be put into containers. The outlet from the storage tank is protected by another screen so that no particles that accidentally fall into the honey are able to get into the final containers.

The lower tank may be made as large as space permits. The one in the picture holds a little over a ton. It is 6 feet long, 23 inches wide and 25½ inches high. Honey from this tank goes into bottles, pails, or sixty pound cans to be stored for use as the market demands.

The honey will crystallize after it has been placed in bottles or cans. Some means must be provided to liquefy the honey. To take care of this task a dry chamber was built (Figure 4). Heat is provided from the same bucket-a-day stove outfit.

Pipes are run to the chamber and a radiator is built in the rear to supply the heat. The radiator is made from 1½ inch pipes as indicated in Figure 4. Valves are so placed that this chamber may be used separately. The two water pipes coming from the heater are hidden behind the stove pipe so they do not show in the pictures.

The dry chamber is built around a

framework of 2x2 or 2x4 material depending upon the size of the chamber. Tongue-and-groove material is nailed to the frame. Two layers of Cellotex ½ inch thick are nailed on the tongue-and-groove material. There is an air space of about ¼ inch left between each layer of Cellotex and between the wood and Cellotex. This form of construction provides excellent insulation. A door is made to fit into the chamber tightly, in a manner similar to that of a refrigerator door. A baffle board is placed about one inch in front of the radiator. A space of 4 or 5 inches is left between the baffle board and ceiling and floor. This arrangement provides a circulation of air and keeps the temperature more even through the chamber.

The chamber should be made large enough to provide two inches of air space between each 60 pound can and three inches between the cans and the walls of the chamber. Slatted shelves are provided to hold bottles or five pound pails.

In addition to the equipment described above, other pieces are built for rendering beeswax. Two trays are provided for this purpose. The upper one is a wooden frame with nails projecting every two inches. Cheesecloth is fastened to it so that the melted wax and honey can pass through to the lower tray. From there the honey and wax drain into an enamel ware pan. The lower tray is made of tongue-and-groove material with a ½ inch strip of wood around the edge. At the corners the strip is 1 inch high. This difference provides an air space so the hot air can flow under the cheesecloth. Additional strips of wood hold the cheesecloth in the center of the tray. The wax does not come in contact with any metal and is therefore a light yellow in color. This equipment is not satisfactory for rendering old combs. The honey obtained from the tray is of good flavor and entirely satisfactory for baking purposes. The honey saved more than pays for the current used or the small per cent of beeswax lost. The honey coming from the chamber is very thick and in some instances may have to be thinned to its normal consistency before it is used.

If high temperatures are used and the honey is heated above 140 degrees Fahrenheit, a cooling pan may be placed between the strainer and the settling tank. The cooling pan is made from a sheet of corrugated iron similar to that in the heating pan. A small pan with 5/16-inch openings is placed at one end as for the heating pan. If the honey is not cool enough by the time it flows down the pan to the tank it may be made cooler with a current of air from a fan. If the air is directed on the pan the honey will cool rapidly.

A small strainer should be made to take all the coarse particles of wax from the honey before it goes into the upper tank from the extractor.

Some 20 mesh screen is fastened to a small wooden frame. The frame is made 10 inches square and ½ inch less than the depth of the upper tank. It is set in the tank so that the honey from the pump passes through it. This arrangement takes most of the wax out of the honey before it goes into the tank or to the heater.

The height of the ceiling where this equipment was used was 9 feet and 4 inches. A slightly lower ceiling would not be serious if adjustments were made to allow for the loss of space.

Similar equipment using electricity for heat has been in operation in Adams County for two years. It gave excellent results. The equipment pictured here was used one year with very good results. The framework to hold the tanks is composed of two 2x4's. The total weight of the tanks full of honey and the heating pan is rather great so the frame must be very strong.

—*ABJ*—

The dandelion (by Roy Grout after Bailey)

The Dandelion

By Frank Beach,

Idaho.

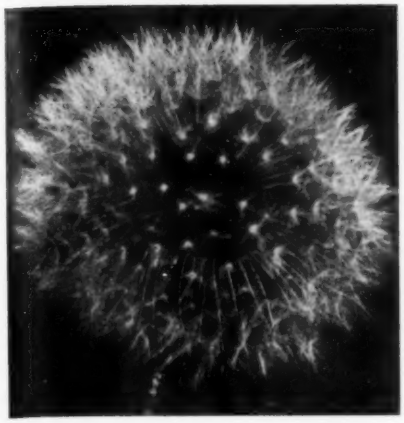
OUR Mini-Cassia Honey Producers Association meets once a month to consider a subject chosen and prepared in advance by one of the members. The members agreed that that if the beekeepers did not know about the dandelion, few other people did; and I was assigned the subject for the following meeting.

Dr. Miller once said that if you want to know something about bees, the thing to do is to ask the bees. Applying this advice to dandelions, I searched for and found a dandelion plant in my garden and set about making some observations on its ways of life.

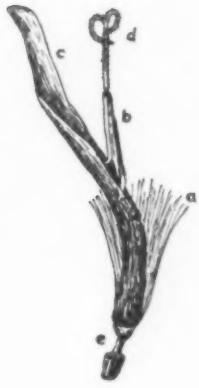
On April 24 the plant was 9 inches in diameter and was isolated from other growth. It had one bud just beginning to show at the base of the plant, two buds with stems half an inch in length, and one bud 1½ inches tall. On April 25 this tallest bud opened, the inner flowers showing first on one side of the bud and gradually opening around the circumference. It opened again on the 26th and on the 27th but failed to open on the 28th. Two new blooms appeared on the 28th, and I used white cloths around their stems to identify them.

These two blooms did not open on the 29th, but a new bloom appeared. By this time there were eleven buds showing. The new bloom was identified by a white string. It opened also on the 30th and on May 1, making three days of bloom.

The weather had been cold and cloudy. On the 30th there was a new bloom. May 2 was cold and cloudy and the blooms did not open. On the 3rd they opened; and each day new blooms were identified by blue cloth, cream silk cloth, fish string, string from an old bee veil, a white



The lightly borne seeds, on vague breezes, cover the earth quickly. At the right, is the floret of the dandelion (by Roy Grout after Bailey.)



Mature fruit of the dandelion (by Roy Grout after Bailey) Like a tiny balloon it travels far.

and blue striped cloth, cloth of a blue work shirt, a copper wire, a shoe string, black cloth, binder twine, and other strings, so that the dandelion looked at last like the head of a woman with her hair done in curl papers.

There were from one to five blooms each day; and these blooms opened one, two, and three days, depending upon the weather and whether the bloom opened early in the morning or late in the day. The fine, clear days would give a better opening and a quicker fertilization of the flowers.

On May 11 the plant had grown to eleven inches in diameter. On the 22nd the dandelion wilted and had stopped blooming, after producing thirty-seven blooms. I dug it up to find the trouble and discovered the root nearly cut in two; near the root were a cut worm, a wire worm, and a brownish, many-legged worm. Some of these worms must have been guilty.

The blooms were ripe within ten to twelve days after opening. In one bloom I counted 190 seeds. Thirty-seven blooms and 190 seeds to the bloom! No wonder we have trouble keeping dandelions out of our lawns.

I cut a blossom open and there were many individual florets, each rising from the tube containing also the style crowned by two stigmas. The anthers were scarcely visible to the unaided eye but were present in a cylinder surrounding the style. The embryo was separated from the base of the floret by a stem about 1/16 of an inch in length and at the top of this stem and below the showy part of the floret was the pappus, already formed to carry the seed on the wind when it should be called upon to do so.

The maturing of the flower is interesting. After fertilization has taken place, style, stigmas, anthers and petal all drop away having served their purpose and the stem supporting the pappus begins to elongate. The stem supporting the whole composite bloom also begins to elongate. One which was 3 inches long grew to 6 inches, while a 15-inch stem grew to be 18 inches high.

While this stem growth is going on, the green involucral bracts have closed over the composite bloom. When they open again, the seeds have matured, each pappus has been pushed upward and now unfolds to carry its seed on the wind.

Buchanan honey containers. Few of the drab and usual in this collection.

From Scotland to the Golden State

By L. H. Sweetser,

California.

At left, two loads of drawn combs for the orange groves. Below, a yard in the California sage district.

HOW many times have you noticed that successful honey producers can frequently look back through several generations of beekeepers in their own family. It almost seems as though stings acquired by grandfather, or even more distant forebears, in the pursuit of their vocation, have inoculated all descendants with a sympathetic understanding of the honeybee and bound them permanently to the custody of this industrious provider of nature's sweets.

Frank R. Buchanan, Glendale, California, well-known honey producer, starting his business life as a school equipment salesman, found this to be the case. His Scottish ancestors were beekeepers. Likewise his father who emigrated to Michigan. The inoculation of the honeybee soon made itself evident in Buchanan's blood, and 30 years ago he got himself a hive of bees.

European foulbrood was then prevalent in southern California. So with true Scottish prudence the young man went slowly with his new undertaking, experimenting with methods to overcome the pest. He imported clean queens, and resistant stock, and bred up a few colonies. While learning that he could successfully fight the scourge, he searched out locations for his future yards. Pack on back, he tramped the foot-

hills north of Los Angeles, examining blooms, studying climatic conditions, finding suitable locations.

His first location was in a broad canyon 50 miles north of Glendale, in a locality abundant with sage and free from noxious plant growth. California sage, he had found, was ideal for honey producing. The product is light in color, mild in flavor, reluctant to crystallize and it sun-ripens in 40 days or less. Also, the season lasts as long as three months, and the flow of nectar is at times such as to almost drown the bush with drenched sweetness.

This first location is still Buchanan's most valued stand. Here he has installed a modern ripening and extracting plant and a dozen 7-ton tanks, covered with canvas tarps in which honey is sun-ripened. The locality is dry, and free from mist, which aids the ripening process. The extracting house is of sheet iron, well ventilated, and equipped with modern devices. A private pipe line has been run from a gas trunk main a mile away, and gas is used to heat the boiler for steam in the uncapping knives. Steam is used to keep the place scrupulously clean, and to sterilize tanks and honey cans.

A season's run has been made at this plant when 200 tons of sage honey was taken from 2,000 hives in 90 days. Buchanan, however, does not confine himself exclusively to the production of sage honey. His first location of the season is 200 miles north, in the cotton district. Also, he takes toll from orange groves, where the season lasts some six weeks; from mountain buckwheat fields; and from lima bean plantings for white honey which is almost devoid of flavor. Some eucalyptus and other "trash" blooms furnish bee fodder for the short winter, usually lasting less than a month, and some harsh honey goes to bakers and other manufacturers.

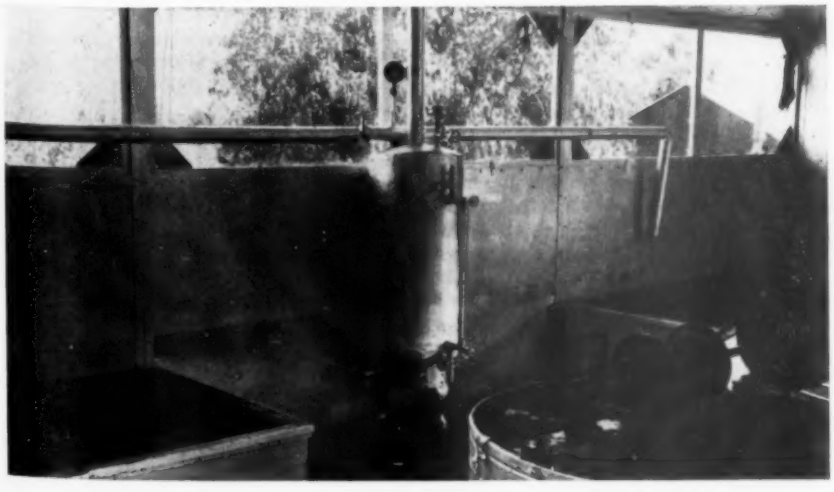
I asked him what were some of the main factors for insuring success in honey producing. "Well," he replied, "there's not much difference between this business and any other. The apiarist must watch details, study his bees and their surroundings, and be on the job. Promptly at the opening of each season he must be ready to 'bust' with 75,000 to 100,000 active bees in each hive.

"Then, he should strive for the highest quality in his product, and keep it up to standard. Cleanliness, contents of his containers true to label, and attractive labels and containers are important. Also, one contacts many people, from start to finish, and I'd say it is necessary to cultivate the faculty of consideration for others. A considerate and friendly beekeeper avoids much controversy about locations for his yards. And he has little trouble with those who retail his product."

I visited Buchanan's bottling plant, on the lots adjoining his residence in Glendale. Cleanliness here, is also paramount. His product is marketed to retailers throughout the Los Angeles district, and he has two delivery trucks which are kept busy at work. Special care is taken to put up his product in attractive containers. Many of these containers are modernistic pottery vases and jugs, which are in demand by housewives as ornaments about the house, and as attractive gifts.

I asked whether the expensive containers and distinctive labels used were not too costly for the ordinary marketer of honey. "Well," he answered, "there is a large class of people who judge an offering by its container. If the contents of an attractive container lives up in quality to its appearance, you've made a customer. New purchasers sometimes buy our product to get the container. When they find the quality is superior, they then buy our more conservative and cheaper containers, which hold the same quaility of goods."

"You have devoted your mature lifetime to handling bees, Mr. Buchanan," I said. "Is there not some message you might give to those not so familiar with this interesting vocation which might be of benefit to them?"



Two hundred tons of sage blossom honey in tanks and cases, at the plant, Piru canyon, California. Below, uncapping tanks, extractor, boiler, in extracting plant.

He thought a moment. "There is much to learn," he replied. "I am almost at the beginning, as you might say, myself. But here's a wrinkle some of the younger beemen might not have yet discovered.

"In manipulating swarm control, pull up the unsealed brood and larvae from the brood chamber, into the super. The unskilled beekeeper usually pulls up the sealed brood, thinking that in cool nights it will not chill. But this operation is wrong end to. The proper method causes the young bees to follow and feed the open larvae, thereby relieving con-

gestion in the brood chamber. Then, put on one or two empty combs underneath."

The entire Buchanan family is interested in the business. Mrs. Buchanan does the corresponding, bookkeeping, and the like. The son supervises much of the field work. He also has a hobby of amateur photographing, and has a series of colored motion pictures of field operations around the apiaries and extracting plants. These movies are in demand for entertainment and instruction in local gatherings.

This family is emblematic of beekeeping families, no matter where they are. Beekeeping is a pursuit which tends to develop the best in a person's character. It is an outdoor pursuit, bringing one into touch with the infinite in nature, with fields and flowers, and hillside slopes, with the absorbing study of the enchanting habits and instincts of the honeybee, and with the production of a perfect, health-giving product for man's consumption, free from adulteration, fortifying or processing to make the product fit to eat.

The beekeeper cares for his charge by allowing them full sway in the activities to which nature intended the industrious creatures to conform. They are not penned up and deprived of their liberty, not slaughtered and carved up for some cook to fry on a hot skillet. They are not live-picked and dressed to make fine roasters for the dinner table, nor trussed up and bled to death to be cured into hams and bacon.

All living things calculated for human use, except the honeybee, are destined for probable slaughter by their keepers. The farmer cannot carry on his vocation without taking life. Even his worn-out milch cow is sliced up to make chipped beef. And his faithful horse ends his days as meat meal for the balanced ration in a poultry yard. Beekeepers carry on one of the gentler pursuits of life. Their vocation tends to make them good citizens. They have been inoculated with sympathy and understanding, and a love for true nature, undefiled. And they are always found to be amongst the respected people of their neighborhood.

—*ABJ*—

North Carolina Beekeepers Lose Million Dollars Annually

By John W. Fox,

North Carolina.

THIRTY thousand beekeepers in North Carolina managed 185,000 colonies of bees which produced 3,700,00 pounds of honey last year. Valued at 15 cents a pound, packaged, this makes beekeeping a half-million dollar industry in this state.

The apiarists of North Carolina lost twice that much, or approximately a million dollars, last year through inferior methods of management, reports C. L. Sams, beekeeping specialist of the State College Extension Service. This conclusion is based on production records of the 2,588 demonstration colonies Sams supervised as compared with the production of the state as a whole.

The 2,588 demonstration colonies, owned by 154 farmers in 54 counties, produced 137,496 pounds of honey, an average of 53⅛ pounds per colony. The average for the entire state was only about 20 pounds per colony, or a difference of 33 pounds between improved and improper methods of apiary management. If the average for all colonies had been 53⅛ pounds, the total production in the state would have been 9,805,000 pounds, and the value of the honey, $1,470,750.

"The 154 farmers who followed recommendations of the Extension Service did it, and so can every other beekeeper in North Carolina who is interested in making more money from his hives and adding to the pleasure of keeping bees," Sams declared. "The demonstration apiarists are scattered all over the state, and they range from fellows with a few colonies to those with several hundred. They are not generally wealthy folks, and the increased cost of using modern hives and other equipment is negligible when compared with increased production and income."

The extension specialist explained that 1938 was a poor year for beekeeping. Nectar flow was light and intermittent in most sections of the state, and therefore honey production was only about 50 per cent of normal.

However, Sams reported that alert and up-to-date beekeepers with improved hives and strong colonies harvested profitable crops as a result of having their colonies ready to take advantage of the opportunities offered by the erratic nectar flows. "Their yield was below their average of favorable seasons, but some of them report 100 per cent yields," he stated. "Indifferent beekeepers may receive profitable crops during good seasons; good crops are obtained during poor seasons only by those who apply better beekeeping practices."

One of the greatest needs of beekeepers in North Carolina is a more rapid change from the old-fashioned box hive and round gum to the modern movable-frame hive. A trend in this direction is shown by the extension apiarist's annual report, which says: "During the past year, through the influence and assistance of the specialists and county agents of the Extension Service, 256 farmers in 60 counties transferred 1,730 colonies to modern hives. The box hive production of these colonies (an average of 4 pounds per colony in 1938) would have been 6,920 pounds of honey, worth $1,038. In the modern hives, at demonstration apiary average (53⅛ pounds per colony), the production of the 1,730 colonies was increased to 91,906 pounds of honey worth $13,748 or $12,710 over the value of production in the box hives."

Other important sources of loss to beekeepers were listed by Sams as follows: (1) Failure to keep the colonies strong at all times, and to have an excess population of workers at the beginning of honeyflows; (2) failure to provide for colony expansion and suitable arrangements for storing the surplus and to provide other favorable environments having a tendency to promote the gathering and storing instinct of the bees and to retard that of swarming during the honeyflow; (3) diseases of bees in certain sections where American foulbrood and European foulbrood are prevalent; and (4) difficulty in marketing, especially among farmers in eastern counties and small beekeepers virtually everywhere.

All of these sources of loss can be controlled to a large extent by adopting improved methods of colony management and by following recommended extension practices, Sams said. He sees prospects for honey production encouraging for the coming year. More than the usual number of colonies are reported in normal condition.

Mounting interest in beekeeping is noted by the extension specialist. "Results do not stop with actual amount of honey produced, as the beekeeper greatly increases the crops of fruits, vegetables, and seed by furnishing many pollenizers free of charge. The bees contribute several times as much to the wealth of the state in pollination of fruits, legumes, and other farm crops as in the amount of honey produced. Orchardists everywhere recognize the importance of bees as pollenizers, and many of them keep apiaries in their orchard for this purpose," Sams concluded.

A Hydraulic Lift

By David Scholes,

British Columbia.

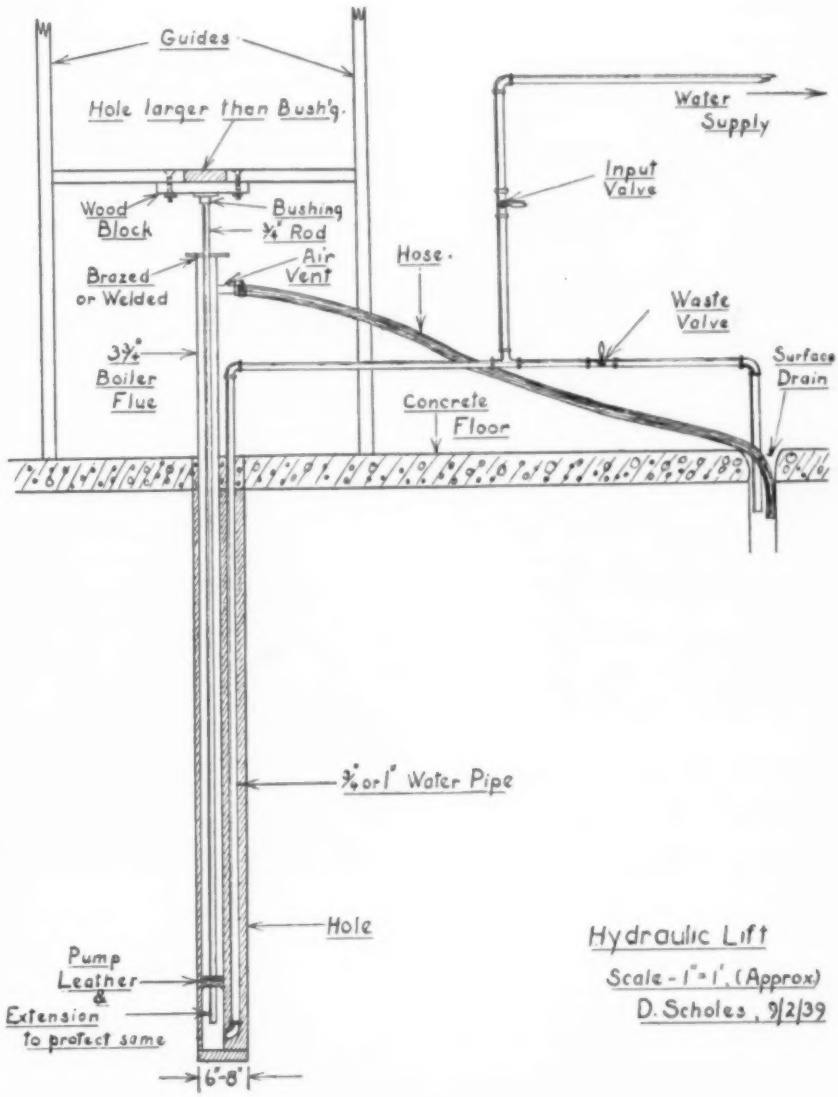
FOR the beekeeper who has reached the stage when his honey crop can be measured in tons there arises the problem of storage and settling tanks. This is particularly applicable to the man who retails his own honey or disposes of it in pails or tin containers. Admitting the advantage of having storage and settling tanks on a floor above ground level, there occurs the problem of lifting this ton or more of honey eight or ten feet, and it is no inconsiderable one when it must be done a super or pail at a time, depending on whether extracting is done below or above.

A simple solution to this problem is the hydraulic lift or elevator. It has several advantages. Depending on its construction it will lift any weight to a height where the weight of water beneath the load plus the load weight is approximately equal to the total water-pressure on the piston. In the case of a gravity-feed water-supply the height attainable will be somewhat less than the source of the water-supply. However, the system described will be limited to one with a lifting distance of one floor.

A piece of boiler flue a foot or so longer than the height it is required to lift and 1¾ inches interior diameter was procured; boiler flue, because it is perfectly round, is better than water pipe. It is then polished with emery paper on a block cylinder of wood (sand may be used instead of emery paper) on the inside. This is to reduce wear on the piston washer. One end is then covered with a steel cap, which should be brazed or welded on, and the other covered with a steel plate or washer, having a ¾- inch hole in it. First, however, a polished ¾-inch rod of the appropriate length should be fitted in the hole. One end of the rod should be threaded and a pump leather, well oiled, fastened 2 or 3 inches from the end. This extension will prevent the washer from damage when the lift is lowered to its extremity. The boiler flue should be well greased with car grease, the piston inserted and the top plate fastened and welded or brazed. The whole assembly is then lowered into a hole in the floor, previously prepared with a post-hole auger. The bottom should rest on hardpan or something equally solid, since this end must support the whole weight lifted. It should be made immovable at the top with concrete. The load platform may then be attached as shown leaving a hole in it larger than the bushing and pump leather. If necessary to inspect the latter the top plate is removed and the piston lifted through the hole, having first removed the block under it. The pipes and valves should then be fitted as illustrated.

The operation of the lift is as follows: Assuming the platform at the bottom, the waste valve is closed and the input valve opened. Water flows down the pipe and under the piston, forcing it up. When the piston underside reaches the level of the run-off hose it will go no higher. A movable support is then put under the load platform to take the weight off the piston, and the input valve closed. The air vent permits the hose to drain. When it is desired to lower the lift, the input valve is closed first, and the waste valve opened. The weight of the platform and piston will force the water down the flue and up the water pipe and down the surface drain. To check it at any point the waste valve is closed. If it were not for the air vent, a partial vacuum would be created above the pump leather and it would not descend readily.

Do not use too little grease, as it is a small price to pay for pre-



vention of rust and for making things run smoothly. The guides should not be neglected, and a liberal dose should be put in the flue around the piston rod. The installation described was taken up and inspected after five years of use and showed no sign of wear. Attention to such details as polishing the piston rod and the inside of the flue makes for reduced wear and longer life. The water pressure here is about 80 lbs. per square inch, which gives a lifting capacity of around 1000 pounds. To do so requires about a gallon of water, and will lift 450 pounds five feet in one second.

As to cost, with the exception of the pipe and fittings, the rest can be obtained second hand for very little at a garage. Very little lumber is needed, and most of that is in short lengths.

A caution—do not omit the run-off pipe. This limits the height to which the piston will rise. If it were not for this the internal pressure would find the weakest spot in the flue and most likely burst it. The air vent is a small hole on the upper side of the run-off pipe.

—ABJ—

"Take Honey, Leave Money" Wayside Selling Plan

By Myron B. Savidge.

Honesty of his fellowman, won for 20-year old Clark H. Kostenbader, Lewisburg, Pennsylvania, a four minute story on a nationwide radio hookup last November.

Mr. Kostenbader, is the proprietor of a unique "serve yourself" honey stand on Route 404, near his farm home.

His remarkable sales idea won him the recognition of the Goodyear Rubber program directors and he was invited to broadcast the story of his stand during their agricultural program over station WJZ and the Blue Network.

Operating on the slogan "Take Honey, Leave Money," the stand has been a great success since he placed it there last August, and he has had very small loss at the hands of unscrupulous passers-by.

A white, glass-enclosed case, the stand is located along the state highway in full view of both the passing motorists and his home. He insists the reason for having it close to his home is only to facilitate replenishing the stock of pure honey he gets from his 16 colonies of bees.

The case contains one, two, five and ten-pound glass jars of honey extract which are clearly labeled as to quantity and price. The money is left by the purchaser in a small box in one corner of the stand.

The youth, an active 4-H Club worker, has sold approximately 2000 pounds of honey by his clever method. Travelers from many states driving cars of every description have helped themselves to honey and left money. Even large passenger busses stop at the white stand frequently while their passengers alight and serve themselves.

Mr. Kostenbader stated that it was surprising the amount of money he has realized thus far from his idea and expects to operate the year round for the convenience of motorists.

—ABJ—

Hillerud Resigns in Alberta

S. O. Hillerud has resigned from his position as provincial apiarist of the province of Alberta, Canada, a post he has occupied since 1929. His resignation was owing to ill health, and Mr. Hillerud will retire to his farm at Claresholm for the present.

It is hoped by everyone that he will make a rapid return to health and to his old position.

Mr. Hillerud's tenure in office is much similar to that of L. T. Floyd, in Manitoba, in that beekeeping has seen a wonderful growth in their provinces since the time they took office. Years ago no one would have considered the western provinces of Canada as beekeeping territory. Now they assume an importance equal to that of any other Canadian provinces or to any of our own best beekeeping states.

When Mr. Hillerud first went to Alberta the industry of beekeeping was a scattered one. The 1938 production of honey in the same province was nearly two and one-half million pounds, showing the enormous growth which has taken place.

—ABJ—

A Wilmington, Ohio, Apiary

George D. Hammon, of Wilmington, Ohio, sends this picture. It is interesting in two points: The hives, instead of being in rows with the fronts on a straight line, turn at an angle in the row to bring the fronts to about a forty-five degree position. The colonies are numbered at the left back edge, with quite plain circular marking disks, apparently white numbers on black background. If these disks have insertion points, cut from the edges and turned at right angle to disk surface, they fasten into the wood with ease and stay until removed for use on some other hive.

Parasites of Larval Pests of Bee Combs

[From Colorado, G. A. Pauli sends photographs of a little-known friend of beekeepers —**Nemeritis canescens,** which is a parasite of the wax moth. Mr. Pauli has little information about **N. canescens** except that it occurs in his region; so we have asked V. G. Milum, apiculturist in the Department of Entomology at the University of Illinois, whose work with the wax moth is well-known, to write a short bit about the parasite, to accompany Mr. Pauli's excellent photographs.—Ed.]

IN the Journal of Economic Entomology 32:946 (October 1925) a brief report of a meeting of the Colorado Beekeepers' Association states that **Nemeritis canescens** Gravenhorst had been found parasitizing larvae of **Vitula edmandsii** which were found in the apiary of one Colorado beekeeper doing considerable damage to comb honey in storage by eating cappings, spinning light webs and pupating in empty corner cells. Although no name is attached to the article, the report is probably by R. G. Richmond who, in personal correspondence with the writer about that time, reported finding **V. edmandsii** infesting comb honey. This species is more commonly found infesting nests of bumblebees, but the writer has reared the adults from larvae infesting neglected honeybee combs submitted by the Rev. H. B. Luther of Bingham, Nebraska. The parasite **N. canescens** is commonly reported as attacking lepidopterous pests in stored products. It has also been reported as parasitizing both the greater wax moth and the lesser wax moth.

Another common parasite of lepidopterous pest of stored grains and comb infesting moth larvae is **Microbracon hebetor** (Say). The writer has reared it from the following all of which are pests of combs of honeybees: The Mediterranean flour moth, **Ephestia keuhniella** Zell; the almond moth, **Ephestia cautella** (Walk.); the greater wax moth, **Galleria mellonella** L.; the lesser wax moth, Achoria **grisella** Fab.; and the Indian meal moth, **Plodia interpunctella.** The first and the last of these named have been reported as pests of bumblebee nests.

Another cosmopolitan parasite of pests of stored products is **Microbracon (Habracon) juglandis** (Ashmead) which is commonly used for genetical studies. **Apanteles nephotericus (Packard)** has been reported as parasitizing **V. edmandsii** in nests of bumblebees. A careful search of all of the available literature would probably show that these species as well as many other attack or parasitize the various larvae that are pests of combs of honeybees and bumblebees.

—ABJ—

Imperceptible Increase

In the January issue, on page 29, I note Mr. Bruce's idea for increase from super bees, and I think that from some experiences I have had during past seasons, I can go him at least one better.

As we all know, increase and production do not, under most circumstances, go hand in hand. But I have a plan whereby small increase can be made advantageously. I operate something over 200 colonies in the St. Lawrence Valley, in New York State, where our clover flow starts June 10 and basswood July 10. As this is one of the largest dairying counties in New York, the pastures are seeded to white Dutch clover, which blooms most of the season. Goldenrod and aster, which produce our dark honey, follow the basswood very closely, which means that the white honey crop must be removed as quickly as possible after the basswood flow ceases.

Before taking off the crop I prepare eight or ten eight-frame hive bodies, filled with dry, drawn combs; each body has cover canvas and cover but no bottom board. I also prepare eight or ten nuclei with queens that I can use as needed. Next I build a rack over the outside of two windows of the honey house and install bee escapes in the screens of these two windows. Each rack holds one of the hive bodies of drawn combs that I have previously prepared. All other windows in the honey house are darkened before the supers are brought in.

In taking off honey at the outyards I am not too careful to drive out all the bees from the supers. We work as fast as possible with six or eight acid boards, and it is inevitable that some young bees will be left in the supers nearest the brood chamber. Back in the honey house we stack these supers crosswise, enabling the young bees to crawl out and to gain the lighted windows. The two hives on the racks have been provided with queens from the nuclei; and the bees, coming out, readily enter these hives which they accept as their own, since they have no other. By morning one has two fine colonies of young bees which can be transferred to bottom boards and moved to a permanent location. Some increase has thus been made, with no perceptible loss from any one colony from which bees have been taken.

Care must be observed in two respects: the combs used must be absolutely dry and the candy in the queen cages must be protected from possible robbing bees; also, the queens in their cages must not be placed in the empty hives until the young bees have begun to come through the escapes.

Last season by this method I made a twelve colony increase, each as strong as any that went into my cellar in the fall.

Benjamin Hosley,
New York.

—ABJ—

Adams at Kiwanis Club

C. D. Adams, of the Wisconsin State Department of Agriculture and Markets, addressed the Cedarburg, Wisconsin, Kiwanis Club, November 21, on bees and honey. He told his audience that Wisconsin produces about a million dollars' worth of honey a year. Frank Eickstedt, a prominent beekeeper, furnished a swarm of bees and sample honey to assist in demonstrating the lecture.

H. C. Brunner,
Wisconsin.

Trials and Errors

By Allen Latham,

Connecticut.

MANY beekeepers are ingenious and inventive. They do not have bees five years before they seek some will-of-the-wisp which will solve difficulties for all beekeepers for all time. They are not satisfied with bees as they are, nor with the long practised methods of beekeepers. They must blaze a new trail to a rainbow's end.

I began beekeeping in 1884, and during the years I have seen the rise and decline of many new systems of management. I wish I could recall them all in order. Here are a few.

In the eighties when I began, the farm papers of New England carried an advertisement of a wonderful hive—"Lizzie E. Cotton's Controllable Beehive." For twenty dollars this hive with bees in it would be sent express or freight collect. Two of my neighbors responded to that advertisement. One got a hive with queenless nucleus and no cover. "Lizzie" wrote that the cost of transportation made it inadvisable to send the cover: "Better make it yourself." This hive was poorly made of rather cheap lumber. The other neighbor got well-made hives of good pine ⅝ of an inch thick, with vast side and top apartments for the storage of comb honey. It is doubtful if one of them is still in existence.

Shortly after that, Heddon came out with his divisible brood chamber hive, made of two and three stories, each about 4½ inches deep. The great idea was that wonderful results could be obtained by shifting the positions of the three stories or even reversing them from time to time. There is no question that, in the hands of some men, this hive would give good results; but it found little favor.

Then came the Golden system, which the magazines had articles about for two or three years and which I confess I have forgotten; and then shortly after the shaking system became fashionable. The idea was that one could, by sufficiently stirring up a colony, instill fresh energy into the bees. The magazines were full of articles about it. I got so sick of reading them that I sat down and wrote a jolly article about a beekeeper whose apiary was next to a trolley line, one or two cars of which had flat wheels. These flat wheels so shook up the apiary that wonderful crops of honey were produced. I signed the article "B. M. Lieawful." It served a good purpose, because no one after that wrote about the shaking system.

About that time also came the Danzenbaker hive. This hive was shallow with closed-end frames that were reversible. It had some good features. It would today be a leading hive for but one thing—bee glue. To carry out the necessary operations after the bees had plastered propolis over the frames was hard. The chief result this hive created for beekeeping was greater efficiency in profanity.

Then there was the reversible frame, the chief folderol of the nineties. The Heddon hive sought to control swarming by inverting the shallow bodies, and queen cells once inverted were usually destroyed. This inversion took the place of cutting cells and became a great timesaver. The reversible frame was a frame that could be used either side up; and, during the nineties and earlier, many types of reversible frames were devised. You will find these frames advertised in the catalogs of that time. The great idea of the reversible frame was that it caused brood to be placed above the strip of honey, previously next to the top bar. By the time the bees had removed the honey and filled the comb with brood, the frame would again be reversed. Bees will endure this kind of manipulation for a time, but as the queen tires, the bees will leave the honey at the bottom and the brood nest becomes smaller, instead of larger. Unfortunately for our hopes at the time, the reversible frame did not fulfill its promise, and it died.

Aspinwall came forward, following the Danzenbaker hive, with a non-swarming hive, so clumsy and expensive that only a few beekeepers attempted to buy or to make one. The inventor found that, also, while it worked in some seasons, in others the colonies would swarm just the same. So another idea was buried.

There are a few fads now. It remains to be seen whether they also are folderols or not. One is the killing of bees in the fall and repopulating the hive in the spring with packages. This practice will probably survive if the southern package shippers can send packages of such make-up and in such a container that the receiver gets packages of bees young and unimpaired in vigor, with a queen that is right and properly introduced.

The top entrance is quite likely to fare like the other innovations. The top entrance, or any entrance at all, is all right if other conditions are all right. I do not care to bother with top entrances, since the wintering problem has not given me any concern.

The two-queen system is another idea which has not yet been buried. Not a few times during my experience of over a half century I have found that over-populated colonies fail to yield crops in proportion to the number of bees. A normal colony in a good flow will usually yield more than an abnormally populous colony. I may be wrong, but I feel that I prefer a single excellent queen to more than one queen in a colony.

Then there is the two-colony hive with one storage place in common. I do not feel the same towards this as I do towards the two queen colony. A little experience suggests that such a colony finishes a super of surplus very promptly with no tendency to crowding in the brood nests. The dual-queen hive does not act in the same way. Both these systems will bear more study, and I am not ready to condemn them.

There are many simple devices which do aid the beekeeper, and it is well to stick to them. I myself, have devised and made over twenty different hives in my years with bees; and I have found that usually any departure from the simple devices I have known for decades produces a hive which I soon abandon. I have only a few years ahead with the bees and all I ask is good seasons. It makes little difference what hives we have if there is a poor honeyflow. Give me a good honeyflow, and I have no anxiety about the result.

———ABJ———

Beekeeping in Java

Bee raising is carried on in particular in central and east Java and especially in the coconut districts in the lowlands. Sometimes there are farms also in the hill districts.

It should be remembered that the average temperature in the lowlands of Java is about 26° c. The rainfall differs considerably: the eastern section of Java has a pronounced dry climate with a period of six months when no or little rain falls while this dry period shortens when one gets to the western side.

The bees reared in the Netherlands Indies belong exclusively to the small species (Apis indica) as it has not been possible to keep the larger species, the large rockbee (Apis dorsata) alive in boxes or beehives. The boxes used in Java are much smaller than those in Europe but are constructed according to the same principle. The population keep the bees in "glodocs" (hollowed out tree trunks).

The production of honey depends entirely on the crops supplying nectar in the vicinity of the bee farm

and varies between 1 and 5 K. G. annually.

The best known types of honey in Java are:

a.—the coconut honey of Cocos nucifera L., dark brown, thin, sour and soon liable to deteriorate. This is the most common honey.

b.—kapoc honey of Ceiba pentrandra Gaert, yellowish brown, fairly thick, can be kept for a long time.

c.—doerian honey of Durio zibethinus Murr, color dark yellow, thin.

d.—orange honey of Citrus maxima Merr, yellow color, thin, has sometimes a bitter taste.

e.—coffee honey of Coffey spec. light yellow, thin, keeps a long time.

f.—dapay honey of Erythrina spec. dark red and thin.

g.—semboeng honey of Veronia arbores, brown and thick. This is the only honey known to crystallize soon. It can be kept for a long time and is the best Netherlands Indian honey.

The nectar producing crops indicated under a/d are found in the lowlands, those under e/g in the mountain districts.

As most of the honey is produced in small quantities and cannot be kept too long no business is to be done in it and the honey is consumed locally. It is only a side product for the native population.

Bee raising is carried on chiefly for the production of beeswax, which product is used in large quantities in the batik industry.

Diseases of any importance are unknown among the indigenous bees. The greatest plague is the so-called wax moth (Galleria mellonella,). The bees are protected against the numerous ants by placing the beehives on benches. Another great difficulty which bee farmers experience is that bees in the low lands soon have a tendency of swarming out.

As bee diseases are practically unknown in the Netherlands Indies, the import of foreign bees is only allowed after the shipments have been thoroughly inspected. Such shipments must aways be covered by a health certincate from the country of origin.

Years ago efforts were made to import European bees, but those soon died out and the experiments were a failure. Conditions in a tropical country like Java seem to be entirely different from those in subtropical countries like Florida and Hawaii, where the Apis mellifica has been imported with more or less success.

[From January 25, "Foodstuffs Round Commerce. Supplied by the American Trade the World," United States Department of Commissioner, Batavia, November 23, 1937.]

—ABJ—

We Are Just-a-Wee-Bit 'Appy

Minnesota, on page 74 in the February issue, apparently is going to have a lot of opposition. Minnesota says, "Three years of the Journal never gave us one useful thing."

Bruce Morehouse of the same state writes, " 'Well! Well!' is right! We can't imagine anybody with only one colony of bees reading the Journal for three years and not getting a useful idea. Our only conclusion is that the fault lies with Just-A-Wee Farm, and we hasten to testify that many Minnesota beekeepers would not be without the Journal. Certainly this February issue is full of many useful ideas on beekeeping."

C. W. Phillips, of Fargo, North Dakota writes, "Cheer up boys—nothing is good enough for some and some are too dumb to recognize crystallized thought, suggestions and facts when put in plain English. I measure the month by the time my Journal is due. No man can love his bees and ignore such a gem of the beekeeping world. It is always juicy with facts and pictures. Each year there is at least one thought which pays for the whole year's subscription, from the economic point of view. Three years and not a useful thing! That is just why he is still Just-A-Wee Farm and must always be."

Penn G. Snyder, of Ohio, states, "From his own admission, it would appear that there is one scholar living in Minnesota who must be an outstanding example for the entire United States. From the pen of whoever operates Just-A-Wee Farm we learn that he is probably the pick of the state, since we find that from three years of the Journal he never has received one useful thing. My, my! It must be just fine to know so much."

M. H. Desich, of Indiana, says, "Five years of American Bee Journal gave us from one to a dozen things each issue. You will always find it in our home, believe me!" He signs this note "From Another Just-a-Wee Farm, Indiana."

Then Homer Johnson, of South Dakota is "somewhat surprised to see Just-A-Wee Farm having that idea. Of course you can't please everyone, but it makes me wonder how many people appreciate what you are doing for them and how many actually write to tell you about it. I started with a colony of bees in 1934 and now have twelve. I subscribed for the Journal in 1937 and realized that I should have done so when I first started. The whole magazine has been a great help. Your market report alone has been worth many times the cost of the paper. Your Questions and Answers department, editorials and other articles have been helpful and interesting. I have managed to find something useful in almost every issue, and if there has been any issue in which I failed to find something that I could use, I at least found everything interesting.

"When I get to the point where I find I can no longer learn anything about bees, I hope some kind friend will see that I have a suitable headstone over my resting place."

That's a lot to say, Mr. Johnson. Thanks!

Howard Graff, of Washington, takes exception to Just-A-Wee Farm's opinion. "I have only been taking the Journal for a little over a year and I have not seen an issue without useful ideas. My wife agrees. She gave me a three year subscription for a Christmas present."

So it goes! Each to his own.

—ABJ—

Experimental Wintering

When father went into beekeeping, he tried many kinds of packing cases. One day looking through a magazine, he saw the ad of a new case which looked promising, and he sent for two to try. They proved to be a nuisance to pack so he only used one. Each case was to hold two colonies and each entrance had to be just so high and the hives had to be just so far apart and tipped forward. The case was a huge box made of thin slats of wood wired together. It took father and mother a whole afternoon to pack two colonies.

The space in front of the hives and on top had to be filled with bale after bale of shavings and the entrances had to be blocked off. When they finished and had wired the cover on, they considered that at least two colonies would winter perfectly.

Winter came with rain and snow and finally toward spring we had a nice balmy spell. All the bees were out on cleansing flights except the two colonies mentioned. Not one of them came out. Finally father took the cover off. Then he got a surprise. One big chunk of ice and shavings was inside with two colonies of bees in the center. Rain had gotten in and soaked the shavings and zero weather had frozen them. The top had been poorly made and warped.

The ice had to be chopped out and the sun had to thaw them out. However they wintered well. But father surely was teased about how he kept his bees in cold storage.

Ruth Hodgson,
Wisconsin.

Book for Flower Growers

There has been a remarkable increase in interest in flower gardens. No other hobby offers a finer opportunity for recreation in the open air. A well planned flower garden offers unlimited pleasure and a splendid chance for creative effort.

A good garden book becomes both a useful tool and the source of priceless information. Among the many new garden books recently issued are several which are freely illustrated with plates made from natural color photographs. The enthusiastic gardener will find endless enjoyment with "The Garden in Color," by Louise Beebe Wilder, issued by The Macmillan Company, 60 Fifth Avenue, New York. This is a noteworthy book in several particulars. The pages are large, with description of fully 500 garden flowers and the text is by a famous author of garden books.

It is only in recent years that a book of this quality has been published at a price within reach of the gardener of moderate income, since color printing is very expensive. By means of large editions and special processes the cost has been greatly reduced. The price of this book is $7.50 and for it one gets 320 color plates which reproduce in natural colors hundreds of individual plants and numerous garden arrangements.

The natural reproductions of the flowers enable one to decide what he wishes to use in his own garden and the text provides the information needed to insure that it will receive proper attention. There are suggestions as to the planting in relation to other groups, bits of history, information as to requirements of sun or shade, moisture, hardiness and dozens of others.

The book may be had direct from the publishers, the Macmillan Company, New York.

—ABJ—

New Garden Book

The great interest in specialized groups of plants on the part of present day gardeners is responsible for a new kind of flower book. Special volumes devoted to peonies or iris or lilacs or lilies meet with warm welcome from lovers of such a specialty. It remained for L. H. Bailey, one of the world's most famous writers of garden books, to prepare a volume devoted to the old favorite, the pinks.

"The Garden of Pinks" is the title of this very new book on a very old garden subject. The author tells how in his early years the catalogue of James Vick found its way to his home and some of the things described in that publication for the year 1872. It was there that he first learned of the Chinese pink and of the carnation and how to grow them. In that far day the carnation had not yet become a greenhouse flower, most of the present day commercial varieties have been developed in recent years.

He says, "For any number of years I have intended to write a book about pinks, both to express my joy in them and to clarify the seemingly hopeless confusion into which the names and kinds have fallen, as well as to stimulate a renewed interest in these desirable plants."

The name of L. H. Bailey on the title page always insures a book of authority in the horticultural field and this one is no exception. Whether your interest is in grass pinks, Chinese pinks, cottage pinks, carnations of any other of the numerous groups you will find here a mass of useful information not elsewhere easily available. More than fifty pages are devoted to intimate descriptions of the various kinds and their place of origin. The pages are large, illustrations are numerous and binding is good. The book may be had for $3.00 per copy from the publishers, the Macmillan Company, of New York City.

—ABJ—

Two New Pamphlets

Two reprints from previous publication have appeared in pamphlet form. They are the work of Dr. Orosi Pal and are of more than ordinary interest.

"Humpback Flies and the Honeybee" is a twelve-page reprint from the Bee World for June, 1938. It describes the humpback fly and says that the insects are very often found in beehives, depositing their eggs on both living and dead bees and on larvae. The significant thing about these flies is that they are able to be active at temperatures from 39° and above. Therefore, they would be able to move about the hive while the colony was still in cluster.

"Studien uber die Bienenhaus" is a fourteen-page reprint from the "Zeitschrift fur Parasitenkunde." It is a fairly complete life history of the bee louse and a description of its activities within and without the hive.

—ABJ—

Exports for 1938

According to the semi-monthly honey report (498), exports of honey for 1938 totaled 3,441,000 pounds, or about 900,000 pounds more than in 1937. Netherlands purchased more honey than any other country with the United Kingdom next, reversing the order in 1937. Germany, in third place, increased its purchases.

Imports of honey, counting Puerto Rico and Hawaii, totaled 2,424,000 pounds, compared with 2,381,000 in 1937. Beeswax imports were 3,037,000 pounds, a sharp drop from 1937, the total of which was 5,440,000 pounds. Imports from Brazil and Portugal alone were 1,650,000 pounds less than in 1937.

—ABJ—

Honey Inspection

Honey inspection would be good for producers who wish it, but not for all honey. The health problem is not present.

T. A. Myers,
South Dakota.

[How about cleanliness?—Editor.]

—ABJ—

Destroy the Tariff Walls

Hervey W. Perkins, of Colorado, sends a clipping from the Longmont Times-Call on this subject, from which we quote:

"Farmers are annoyed and penalized by state laws. Free exchange of commodities between the states has for a century been advanced as a phase of American business making for prosperity. No tariff walls or petty fees existed. State lines connoted no walls—no passports.

"Today's Washington news tells us that Secretary Wallace appealed to the states for removal of trade barriers which he declares are impeding business recovery and causing loss to the nation. Practically every state has placed regulations on interstate trade, inspection fees, licenses and taxes on goods produced in other states; conflicting food grading, labeling and packaging; a maze of quarantines, embargoes and other impositions—. For once we find ourselves in hearty accord with Secretary Wallace."

Commenting on it, Mr. Perkins says, "This expresses my sentiment much better than I could do it myself. I am 100% for stamping out bee disease, but if it is attempted in the wrong way, it may result in retaliatory legislation and hamper and discourage, if not cripple, the industry. The Beekeeper may meet with so much discouragement that he will have to quit. While we are trying to stamp out foulbrood, I believe we should act in a way to encourage the amateurs and enthusiasts Migratory beekeeping truly raises new problems.

The Editor's Answers

Heating Honey

How long is it necessary to heat honey to keep it from granulating?
ILLINOIS.

Answer.—When honey is heated, it always darkens; therefore, the shorter the time required for heating it, the better off you are. The idea is to heat the honey to about 150°F. as rapidly as possible. Then cool it quickly and seal it in bottles or cans while it is still warm. This will give you a minimum amount of granulation.

—ABJ—

Surplus Honey from Packages

If I get a two-pound package of bees the first of May, will they make a crop of honey, provided, of course, the season is right?
IOWA.

Answer.—If your two-pound package gets off to a good start, the colony should eventually fill the brood chamber and make a super or two of honey. Much depends though, on how they are handled at the beginning. If they are given fully drawn combs they will progress at a faster rate than if they are given foundation, which they will have to draw out.

—ABJ—

Locust as a Honey Source

Is the honey locust a valuable honey source?
NEW YORK.

Answer.—The black locust is the one most commonly regarded as a honey plant, and it does yield a good supply of nectar for a few days, but the flow is short. The honey locust, the one with the very long thorns, also yields honey. According to my observations, it is likely to last for a longer period than the black locust.

—ABJ—

Royal Jelly

Some queen breeders use royal jelly and some do not. These latter call their system the "dry" system. How does one get this jelly in early spring? Can it be kept in storage or should a fresh suppy be obtained every time larvae are transferred to home-made queen cells?
CONNECTICUT.

Answer.—My method of getting royal jelly with which to start the season has been to prepare a colony for queen-rearing in the usual way and moisten the cell cups with honey. In each of these cell cups is placed a very young larva and they are given to the colony. Usually one or two cells will be started and supplied with royal jelly. As soon as they are sufficiently supplied, I graft a new lot and supply each cell with some of the royal jelly from these. Sometimes it is necessary to try two or three times before getting them started properly. At other times, we have to change the colony, as occasionally we find a hive of bees which do not make good nurses.

While I know that some queen breeders do place the larvae directly into dry cell cups with some success, I always thought that it was better to use the royal jelly. When using the dry method, it is necessary to feed the bees very freely at the time of giving the cells. In fact, feeding is likely to be very helpful under any condition, even though the cells are given royal jelly. For this purpose I have used an ordinary garden sprinkler in which is placed a 50-50 sugar syrup. When the frame is replaced in the hive, I simply sprinkle the tops of the frames, and all the bees that come to the top get this sugar syrup. Being thus gorged with food, they are much more likely to feed the newly started cells freely.

I have seen some references to royal jelly being stored in a refrigerator but have never tried it. You will notice that in the hive royal jelly dries up after a certain length of time and needs to be replaced.—F. C. P.

—ABJ—

Supers for the Modified Hive

How many supers would you recommend for each colony for extracted honey production with the large hive?
WISCONSIN.

Answer.—Although it is possible to run even the Modified Dadant hive with two supers by removing the combs just as soon as they are well filled and ripened, we would not think of doing with less than four supers and would rather have five or six.

—ABJ—

Small Outfit

I have about twenty-five colonies. Do you think a plain uncapping knife is sufficient or should I have a steam-heated knife and boiler? What size storage tank would you suggest?
WISCONSIN.

Answer.—At present you will not need anything better than a plain uncapping knife. When you increase the size of your apiary you can get the steam uncapping knife or perhaps the steam uncapping plane. At the same time, you can outfit yourself with a capping melter and install a steam boiler that will take care of both. However, a large investment should not be made until the size of your apiary warrants it.

Buy a good sized storage tank. A 100-gallon tank is not too large, even though you may not fill it the first year. Storage tanks last a good many years, and it will be better to have a large one at the start than to add small ones as you go along.

—ABJ—

Transferring to the Modified Hive

I have a colony in an 8-frame hive. I want to transfer it to a Modified Dadant hive. How shall I go about it? The fruit bloom begins here about the latter part of January.
OREGON.

Answer.—Wait until the fruit bloom is on. Set aside your 8-frame hive and put the Modified Dadant hive in its place with an excluder immediately over the frames. Now carry your 8-frame hive to the entrance

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of the Modified hive and shake all the bees out in front of it, making sure not to damage the queen. If you can find the queen, put her into the Modified hive, together with a few of the bees. Now remove the 8-frame hive from its bottom and put it above the excluder, making everything tight around it. Put over all the cover. In this way, any bees remaining in the 8-frame hive and the brood, which will continue to emerge for twenty-one days, will be obliged to pass through the excluder in order to leave the hive. Down below the queen will have been busy laying, and you will have a transfer. You can dispose of the 8-frame hive or keep it for use as a super for storage of honey.

—ABJ—

Modified Dadant Fall Weight

How much should the Modified Dadant hive weigh in the fall, as it is being made ready for winter? WISCONSIN.

Answer.—The Modified Dadant hive—including, of course, bees and honey—ought to weigh approximately eighty pounds if it is to winter well. We should rather have them weigh 100 pounds at the beginning of winter, because we know then, that, even though we may have warm weather and brood rearing during the winter, there will be plenty to carry the colony through.

—ABJ—

Another Fireweed

A friend returning from a beekeepers' short course at Michigan State College a year or two ago brought a rough drawing of a plant which had been mentioned there as a splendid source of nectar in parts of this state. Notes accompanying the drawing indicated that it was locally known as fireweed, and that it blossomed in late summer. The name fireweed, like so many common names, is of little help in identifying a plant, for I know at least a dozen different ones that are found under that heading, and the drawing showed only the general characters of the plant, neglecting the special ones which would have made identification possible. So the process resolved itself into one of general observation and elimination until the plant was run down to the Senecio tribe of composites and finally identified as **Erechtites hieracifolia**, a coarse, rank-smelling annual found in moist woods and recently burned areas hence the name fireweed.

A careful search of the literature reveals no mention of it as a source of honey, nor is its general appearance even suggestive of that role. Correspondence reveals the fact, however, that it has a good reputation in some quarters and observation here during the summer of 1938, when the bees worked it steadily from July until September, points to the fact that it must be a source of much surplus where it is present in sufficient numbers. In any case it is a plant that will bear watching and perhaps introducing into suitable areas.

C. W. Wood, Michigan.

Bees and Spiders

I had kept bees in Connecticut thirty-three years before I had a really good crop of fall honey. I used to get it almost every year in Massachusetts.

I did not know at first why this was, thinking that weather was responsible. It is true that weather conditions affect the fall flow materially, and when September has but few sunny and warm days the crop will be minus. But after five years I discovered a more important reason why we seldom get honey here from golden rod and asters. The reason is spiders.

There are no less than six varieties of spiders that seriously molest bees here, but the worst ones are those yellow and black ones that spin round, geometrical webs. I have seen eleven healthy bees, by actual count, at one time enmeshed in a web.

One year the flow started out well and the colonies were very strong. In less than ten days the field forces were practically all caught and very few bees were going and coming. Looking into the hives, one would find bees covering only four combs where they were covering sixteen or more at the start of the flow.

The year of the good crop for some reason which I do not yet know, spiders were scarce in the fall. Where one could usually find ten to fifteen of those webs per square rod, only one web would be found in six square rods. The hives were filled with bees and what was much more to the point, the brood chambers were stocked with an excellent supply of the very best fall honey.

It was true we had some good weather, but the absence of spiders was the most important factor.

One year I estimated that spiders took 7,000,000 of my field bees in ten days. This was not guesswork. That year if one examined a web in the early morning he would find that madam spider had collected all the bees during the night and had a ball of bee fragments as big as a marble.

Allen Latham,
Connecticut.

—ABJ—

Brown, Utah Inspector

D. H. Brown, of Sandy Utah, has been appointed inspector for Salt Lake County by the board of commissioners at the request of W. H. Hendricks, in charge of inspection for the state board. Mr Hendricks hopes to have inspectors in each of the chief honey producing counties this year.

Glen Perrins,
Utah.

Beeswax for Waterproofing Boxes

AN important new market for beeswax has been opened up by the Lawrence Paper Company, Lawrence, Kansas, with its development of a new type, waterproof, cardboard box having corrugations of asphalt and an inside coating of wax.

Large quantities of beeswax are being used on thousands of cartons being produced by this firm for use in shipping flowers, certain types of meat, celery and a variety of other products. This type of wax has been proved superior to paraffin and other waterproofing materials from several standpoints. First it can readily be applied very evenly. It has exceptional waterproofing qualities. It does not rub or scrape off nearly as easily as most other waterproofing materials.

The waterproof corrugated box, a patented product produced under the trade name "Freezur Board" meets an important need of various industries for a light, yet durable shipping container. The floral industry is one noteworthy example. For many years wholesale florists shipped their flowers in wood.

Today, in Colorado, the center of the nation's carnation industry, a large percentage of the shipping is being done in corrugated board. It is less expensive than wood. The largest size corrugated box used costs only sixty cents, as compared with 75 cents for a wood container of the same size. The corrugated boxes are lighter and more easily handled than wood ones. They are more nearly waterproof. They are extremely durable, as the waterproofing materials keep the paper from becoming water-soaked and breaking down.

The flower shipping boxes have ice compartments in the center where the refrigerant can be packed to keep the stock cool, the stems moist, and the air properly humidified. Since water from the melting ice must not come in contact with the blooms, corner drains are provided in the waterproof flower boxes.

With the celery boxes the idea is to keep the ice water in, for that is what keeps the celery crisp and fresh. So this type of box is designed a bit differently, in such a way that it is virtually watertight.

Boxes of the same material for meat packing and shipping of dried milk as well as several other purposes are made to fit individual requirements. The meat box used by northern packers for shipping offal into the South for sale to negroes has drainage. The meat is placed in the boxes and frozen solid. If any moisture occurs from slight thawing in transit it won't affect the box. The dried milk box, on the other hand, is made moisture-proof and practically air tight to keep the powdered product from absorbing moisture and lumping.

In every one of these containers, beeswax and asphalt combine to protect the paper construction of the box. The inner coating of beeswax keeps most of the moisture away from the paper. The asphalt inside the corrugations takes care of the rest.

PURE ITALIAN QUEENS AND PACKAGE BEES

You can count on us for perfect packages, full weight, quick service and good queens.

Our colonies are regularly state inspected. We furnish, with all shipments, a clean health certificate.

PRICES:

Queens untested	$ .50 each
Queens tested	1.00 each
2-lb. pkg. with queen	1.75 each
3-lb. pkg. with queen	2.25 each
2-lb. pkg. without queen	1.25 each
3-lb. pkg. without queen	1.75 each
Each additional pound of bees	.50

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"Honey Girl" Italian Bees & Queens For Spring 1939

On the same old basis, Service, Quality, Safe Arrival and Satisfaction. Package bees by Express charges collect.

Package bees with Queen Introduced Loose, with a comb of brood.

	1 to 9	10 to 49	50 or more
2-lb. package	$2.40 each	$2.15 each	$2.10 each
3-lb package	3.00 each	2.75 each	2.65 each
4-lb. package	3.50 each	3.25 each	3.15 each

For additional combs of brood add 50 cents each

Regular combless packages with caged queens.

	1 to 9	10 to 49	50 or more
2-lb. package	$2.25 each	$2.00 each	$1.95 each
3-lb. package	2.85 each	2.60 each	2.50 each
4-lb. package	3.35 each	3.10 each	3.00 each

Safe arrival guaranteed,—if any loss or damage in transit, obtain Express Bad Order receipt describing damage and send this to us with your claim and we will replace immediately—prepaid. Certificate of Inspection certifying our apiaries free from bee disease with every shipment.

We are ready to fill your orders. Your orders large or small will be appreciated and receive our very best attention.

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We carry a complete line of supplies. Send for price list.

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Use a Recipe Book

By A. J. Van Rossum,

Minnesota.

DOES it pay to give recipe booklets with honey? That's a fair question. Advertising costs money. Does it pay?

Here is my experience. Ten years ago I was unable to sell to certain stores. I had to sell from house to house, and farm to farm and from my service station. But customers were made.

I started giving away recipe books. Now, storekeepers ask for our honey. We have probably given away at least 400 of American Honey Institute "100 Honey Helpings." We have put recipe stickers on pails, fastened with a rubber band. We have fastened leaflets around with a rubber band and the result is less and less sales resistance. Yet I have spent less than $50.00 in four years for recipe material. I know it has helped me get $1.20 for 10-pound pails of honey when others get only $1.00 to $1.10. Do your own calculation and perhaps you will agree that one recipe used by one homemaker is worth the price of at least ten booklets.

I have discovered a good way to get the good will of strangers when canvassing from farm to farm in new territory. Drive into the yard slowly, close the gate, knock on the door, stand back a few feet and say "Good morning, lady. I am from (name your town, the direction from the farm and how far away.) I am selling honey. Now here, I have a sample. Please look at it. Please get a spoon and sampe it. Notice the cover is made so the honey will not drip." If she will not get a spoon, just drop a little on two of her fingers. Have Drip-cut containers of honey for sampling. I have sold thousands of pounds of honey to farm people. I have never had but two refuse to sample my honey. Say something like this with a smile and you will be surprised how many folks you will have smiling back at you. You have their good will from the start.

—ABJ—

Utah Beekeepers Seek Bonded Warehouse

Beekeepers of central Utah, heart of the honey producing section, have decided to investigate the possibilities of procuring a bonded warehouse in which to store honey when there is a surplus on the market. This decision was reached at a reorganization meeting held in April.

Glen Perrins,
Utah.

Meetings and Events

Florida State Meeting

The meeting of the Florida State and the Pinellas County Beekeepers Associations was held at Largo on February 21. It was attended by persons from fourteen states and three Canadian provinces.

Florida Chief Apiary Inspector, Robert E. Foster, spoke of the need for more stringent regulations regarding incoming bees and equipment. He cited one case where two truck loads of bees were seen coming into the state. Later in the day the empty trucks were seen returning. The truck license plates indicated the state of origin. Considerable time was spent in locating the bees, and it is believed not all have as yet been found. However, in those which were examined considerable foulbrood was present. The owner has not as yet been found. Mr. Foster will ask that the apiary act be changed to require that incoming bees and equipment shall be accompanied by a certificate of health and that a copy of the certificate shall be sent to the office of the apiary inspector and that it shall also indicate the ultimate destination of the bees.

Mr. Foster does not favor embargoes but fears that they may become necessary unless the movement of infected bees and material is stopped. He made it clear that there was no feeling on the part of Florida beekeepers or officials that they wished to stop the movement of the bees into the state, provided they were not infected and that beekeepers would observe priority occupation of beekeeping territory.

Dr. Wilmon Newell, director of extension for Florida, while favoring efforts completely to eradicate American foulbrood from the state, said that the emphasis would be on control rather than eradication. His opinion is that when the investment, income and taxes, and importance of Florida beekeeping are compared similarly with other agricultural activities in the state, Florida beekeeping will be found to be receiving a good share of funds available.

It was stated that some of the large bread bakers had discontinued the use of honey in their products. One reason given for this was that the well-known variation in honey so reacted on the baked products that the bakers had become dissatisfied.

Mr. DeMuth, of New York, said that in his experience bakers would use nothing but the best white clover. Mr. Tietsema, of Florida, said that palmetto gave satisfaction. Considerable discussion indicated that clover and palmetto each may be depended on to remain nearly uniform from year to year and that that is the reason why bakers find them satisfactory.

It was suggested that some beekeepers had delivered unclean honey to bakers, believing that any old thing would be acceptable, whereas honey for bakers should be as good as honey intended for table use.

Elmer Carr.

— o —

Seneca County (Ohio) Meeting

A bee meeting of extraordinary interest was held in Tiffin, Monday, March 13, by the Seneca County Beekeepers Association, with nearly one hundred members and visitors present. W. E. Dunham, of Ohio State University, was guest speaker. The program was built around pictures of bees and orchard pollination and bees pollinating alsike clover, vegetables, and legumes. The speaker supplemented the pictures with an interesting talk on the subject, pointing out that the pollinating value of bees is worth ten to fifteen times the value of the honey they produce.

This meeting was by far the largest of its kind ever held in this vicinity. The committee in charge were: Charles Walters, president of the county association; Henry Ward, secretary; Cleve Renninger, county bee inspector; and Ray Bish, successor to the J. F. Moore apiaries.

Henry B. Ward,
Secretary.

— o —

Manitowoc County (Wisconsin) Meeting

Reinhardt Grimm was elected president of the Manitowoc County Beekeepers' Association at the annual meeting, March 31, at Reedsville, Wisconsin. He succeeds Albert Krueger. Other officers named are W. C. Otto, vice president and Fred Mack, secretary-treasurer. All are from Reedsville.

Ronald Burgdorf, Kiel, assistant bee inspector, in an address before the association, said that Manitowoc County took the lead in the state last year in control of the foulbrood situation. Conditions, he said, were particularly bad along a two-mile strip near the southern border of the county.

William Burgdorf, also of Kiel and father of Ronald, spoke to the association on the marketing of honey for profit.

H. C. Brunner,
Wisconsin.

— o —

Wisconsin Meeting

George Jacobson, Kaukauna, Wisconsin, was elected chairman of the Fox River Valley district of the Wisconsin Beekeepers Association at a meeting April 6 at the city hall in Appleton, Wisconsin. He succeeds Edward Hassinger, Jr., Greenville. Other officers named are Cornelius Meyer, Appleton, vice-president, and Leonard A. Otto, Forest Junction, secretary-treasurer.

Speakers at the meeting included E. L. Chambers and C. D. Adams of the state entomology department, Madison, who discussed the control of bee diseases; H. J. Rahmlow, secretary of the Wisconsin Horticultural Society, who showed motion pictures depicting improved methods of introducing bees, spring feed and queen rearing; J. F. Magnus, county agricultural agent, who spoke on the clover situation in the Fox River Valley and A. J. Schultz, Ripon, state persident of the association; Otto Jacobson and Milton Ehradt, Oakfield.

H. C. Brunner,
Wisconsin.

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Inspectors' School

A school for the fifteen bee inspectors in northern and central Wisconsin was held March 23 and 24 at Menominee, Wisconsin by the State Department of Agriculture and Markets. C. D. Adams, E. L. Chambers and N. F. Thompson conducted the instructions at the Menomonie school. The first two are of the State Entomology Department at Madison and the third from Menominee.

H. C. Brunner,
Wisconsin.

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A Beekeepers' School

[The following notice was received too late to be included in the April issue. As it may be of interest we print it now, though opportunity for registration is past.]

Several outstanding Connecticut beekeepers are organizing a school for beekeepers at the apiary of A. W. Yates, Inc., in Hartford. The course, which will be gratis, begins on Saturday, April 29, at 2 P. M., and will continue each Saturday afternoon, weather permitting.

The tentative schedule offers instructions in "Spring Inspection," by W. H. Kelsey, State Deputy Inspector; "Swarm Control," by Chas. Rost, secretary of Connecticut Beekeepers' Association; "Swarm Capture," by E. L. Baker, "Champion Bee Hunter of America"; "Supering

Lewis Beeware

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Minnesota and western Wisconsin beekeepers can save money, time and freight by ordering G. B. Lewis Company and Dadant & Sons' bee supplies from Standard Lumber Company, Winona, Minn.

The prices are the same as on factory shipments.

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QUEENS 40c QUEENS

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Will take honey or wax as payment for bees. Orders filled promptly. 15% discount to dealers and on large lots.

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Try it and be convinced. Manufactured by

Oscar H. Schmidt, Route 4, Bay City, Mich.

for Extracted Honey," by Roy Stadel, past president of Connecticut Beekeepers Association, assisted by Mrs. Stadel; "Supering for Comb Honey," by Benj. Ellison, Vermont and Connecticut producer; "Queens and Queen Rearing," by Allen Latham, queen breeder and international authority on apiculture; "Preparing Bees for Wintering," by Prof. L. B. Crandall, Apicultural Extensionist, Connecticut State College.

Simultaneous with the course in beekeeping, the Women's Auxiliary will conduct a school for the "Use of Honey in the Home," directed by Mrs. M. Louise Yates.

It is proposed to issue certificates of "Bee Master," "Expert Bee Master," and "Honey Dietician" to proficient participants in the school, which should meet the qualifications of 4-H Clubs, Boy and Girl Scouts, who will be eligible to attend.

There will be no tuition fee required. Persons interested should enroll on or before April 22nd, with Claude L. Yates, 15 Chapman Street, Hartford, Connecticut.

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South Carolina State Meeting Held In Columbia

President Ezell called to order his representative group of S. C. beekeepers on March 15th. Representatives from nearly all county organizations attended. Most important items on the docket were adoption of a Palmetto State honey label and an attractive honey jar. E. S. Prevost, state extension specialist, will see that all organizations cooperate in using this exclusive package in marketing their honey.

Extension Director Watkins expressed the desire of his department to help farm people diversify their activities.

Professor Dunavan, instructor in beekeeping at Clemson College, reviewed the events of the Charleston conference and offered favorable comments on the activities of the state extension specialist in maintaining progressive organizations in the beekeeping field.

—ABJ—

Evening at the Hive Entrance

The sun had just set when I went into the peach orchard to close entrances for moving bees out, April 30. Some early varieties of apples were already in bloom, yielding a light honeyflow. Having the whole night ahead of me I sat down to wait till the bees were in.

Ten minutes after sunset they were dropping on the alighting board three or four at a time. Twenty minutes, and they came in singly, with inter-

vals of nearly a minute when no bees would appear. Thirty-five minutes past sunset, and still one drops in occasionally. But I must be on my way. Some of the bees, I suspect, will stay out all night. Either that, or they return after dark; for darkness is now at hand.

Walter H. Hull,
North Carolina.

—ABJ—

Wax Production Neglected

In the early days of beekeeping in this country wax was considered an important source of income. Of late it seems to have been neglected, in spite of the higher price as compared with honey. Wax is worth approximately three times as much as honey, and no containers are required for wax, and there is no danger of loss from leakage or breakage. At present there is no oversupply of honey; but the shortage of wax is even more pronounced. For the year ending June 30, 1935, we imported: honey, 68,483 lbs., wax 4,174,584 lbs. (Government reports.)

That figures out more than sixty times as much wax as honey, worth about 180 times as much. It means probably that we can produce honey more efficiently than wax. Still it is a good thing to keep in mind against the time when we find the honey market unsatisfactory.

W. H. Hull,
North Carolina.

—ABJ—

New Magazine

"4-H Horizons" is a new magazine. Dr. C. B. Smith, assistant director of extension in the U. S. Department of Agriculture for 42 years, is one of the editors. It is dedicated to the young people of the 4-H Clubs, beautifully gotten up, good pictures and excellent reading. Leaders in 4-H club work in bees should see that appropriate contributions are available for this new publication. The editorial offices are at Wellesley, Massachusetts.

—ABJ—

Death of Veteran Beekeeper

We regret to learn of the death of J. F. Hines, Saxton, Pennsylvania, which occurred on March 8. He was seventy-five years old and had been a beekeeper for over fifty years. One of the old-timers, he went back to the days of Dr. Miller, Charles Dadant, A. I. Root, and other pioneers.

SPOERRI'S GOLDEN BEES

Large, gentle, and Super-Productive! Original Italian stock but improved and bred up over a long period of years. Every queen is young, powerfully productive, and personally reared. DELIVERY ON TIME!

Queens, postpaid 75c each. 10 and over 70c each.

Packages with queens,	2-lb. size	3-lb. size
1 to 9	$2.45	$3.15
10 to 49	2.25	2.90
50 to 99	2.10	2.75
100 and over	2.00	2.65

Discount to dealers and associations, 1 to 99—15%. 100 and over—20% on unit prices.

Spoerri Apiaries, St. Bernard, P. O., Louisiana

BEES AND QUEENS [3-Band Italians]

Priced as low as they can be produced without sacrificing quality.

PACKAGES WITH QUEENS—	2-lbs.	3-lbs.	
Any number	$1.90	$2.50	QUEENS—50c each any number

PRICES AFTER MAY 20TH

PACKAGES WITH QUEENS—	2-lbs.	3-lbs.	
Any number	$1.35	$1.70	QUEENS—35c each any number

Your choice of queens in dry or candy cages. For queenless packages deduct price of queen. No discount on these prices. Highest quality, reliable service, full weight, young bees and light crating. Safe arrival and satisfaction guaranteed. 5% extra queens with order of 20 packages or more.

W. O. Gibbs ❖ Brookfield, Ga.

Three Banded Italian Bees and Queens

Want your orders filled quickly? Give us a trial. If in a rush wire us. We guarantee 24 hour service through the month of May.

We have never received a complaint that our packages were under weight, and our queens are guaranteed to please the most exacting.

2 POUND PACKAGE WITH QUEEN	$1.75
3 POUND PACKAGE WITH QUEEN	2.25
QUEENS 50 CENTS EACH	

Complete instructions for installing and handling, come with every shipment. Place your order with a firm that has your business at heart.

One extra queen with each 25 packages or queens ordered. Packages with queen introduced 10 cents per package extra.

SHAW & HOMAN, Shannon, Mississippi

REVISED PRICES

First Quality Bees and Queens at a Price You Cannot Beat Anywhere

PRICES

	1 to 50	50 to 5,000
2-lb. packages with queens	$1.60	$1.50
3-lb. packages with queens	2.20	2.00
Untested queens	.60	.50
Tested queens	$1.00 any number	
Additional bees	.50 per lb.	

We have shipped several hundred thousand packages and queens in the last 28 years and you are assured of good service and first quality Bees and Queens. We are now making daily shipments. No discount from above prices.

MERRILL BEE CO., BUCATUNNA, MISS.

Mississippi's Oldest Shippers

JENSEN'S

Mid-Season Change-Over Prices

The same High Standard of Quality that has characterized our products for many years, plus every inprovement of merit known to the package bee and queen business. Beware of too low quotations, there is usually a reason or reasons for unwarranted price-cutting, irrespective of claims relative to seniority or volume of business. Some things are inconsistent. We want your business on a "live and let live basis." We, like you, are dependent on the bees for a livlihood. We guarantee to give you full value for the money you send us.

TWO POUND PACKAGES

Quantities	With Queens	Queenless
1- 10	$2.10	$1.60
11- 50	1.95	1.50
51-100	1.85	1.45
101-up	1.75	1.40

THREE POUND PACKAGES

Quantities	With Queens	Queenless
1- 10	$2.60	$2.10
11- 50	2.45	2.00
51-100	2.35	1.95
101-up	2.25	1.90

QUEENS—Select Untested

1- 10	$ .50
11- 50	.45
51-100	.40
100-up	.35

Dealers 15% off base prices. We produce everything we ship, in our own apiaries, they come to you fresh, and ready for the job they're intended for. There is still plenty of time for packages to build up and store a crop. Spring is late, moisture sufficient in most places, and prospects never better. Empty hives make no honey. Wire or Air Mail your order, in many instances we can make shipment next day.

JENSEN'S APIARY CO.

MACON, MISSISSIPPI

FIGURE THE DISCOUNT

6% on $10.00 orders. 8% on $50.00 orders. 10% on $100.00 orders. 20% to recognized dealers. Additional Discount 5% on orders booked 30 days in advance of shipping date.

PRICES:

Select laying Italian queens.....$ .80 ea. 3-lb. pkg. of bees with queen... 3.35 ea.
2-lb. pkg. of bees with queen... 2.60 ea. Queen loose pkgs.....15c each extra

Best Quality and Service. Live Delivery and Satisfaction Guaranteed.

J. F. McVAY (Order direct from this ad) **JACKSON, ALABAMA**

FROM **IMPORTED STOCK**

Pure Italian Queens

Bred from mothers from Northern Italy. All leather colored. They are different.
To June 15th, each queen 75c. After June 15, 50c.

MIDDLE TENNESSEE APIARIES

1020 Lischey Ave. Joe B. Tate & Son Nashville, Tenn.

California's Golden Jubilee Convention

The California Association will play host to the Annual Conference of the American Honey Producers League, the American Honey Institute, the Apiary Inspectors of America and the California Bee Breeders' Association in Sacramento on November 7 to 10.

Combine work with pleasure in a vacation trip to California. If you have any suggestions for a constructive program, we will be glad to receive them. Any of the following things will make good program subjects: Marketing, with its many ramifications of freight rates, cooperative selling, standardization, advertising; by-products, to stimulate the consumption of honey; better bees, to reduce the cost of production and facilitate disease control.

The Convention Bureau of Sacramento, a splendid working organization, plans to prepare everything in the way of entertainment, room facilities and publicity to make the convention the best ever held in the West. The possibility of an overnight boat trip down the Sacramento to the Golden Gate International Exposition at Treasure Island on the last day of the convention is a possibility. This would be an event that will long linger in the minds of all those who participate.

Plan early to be with us in November and interest other beekeepers likewise.

J. E. Eckert, Chairman,
Arrangements Committee,
University of California,
Davis, California.

—ABJ—

Utah Meeting

The Utah Association held an unusually optimistic convention March 18 at the Newhouse Hotel, Salt Lake City, with a record crowd. Orderly marketing and reducing price cutting were keynotes. M. S. Stone, of the Superior Honey Company, Ogden, and president of American Honey Institute, told the group that cooperatives have been tried in other sections of the country. As a result the association plans to extend its activities into the cooperative marketing field.

According to J. Fleming Wakefield, Provo, honey production in Utah dropped to 40 pounds per colony average last year, while the ten year average is 50 pounds, and two years ago the average was 60 pounds. Utah now has 1,353 apiaries with 63,857 colonies. Foulbrood has been cut from four per cent a few years ago to 1.7 per cent.

Officers: Arthur G. Pledger, Ogden,

re-elected president; A. W. Anderson re-elected secretary; Reuben G. Rhees, Ogden, was made a director.

Glen Perrins,
Utah.

—ABJ—

William F. Sass

William F. Sass, 61, prominent Fond du Lac (Wisconsin) County farmer and inspector of apiaries for sixteen years, died at St. Agnes Hospital Saturday, April 8, after a two weeks' illness. The family home was in Lamartine township. Mr. Sass also served as secretary-treasurer of the Wisconsin Association. He is survived by his widow; one son William; a daughter Mrs. Michael Moses; and nine grandchildren.

Melvin News Service.

—ABJ—

Selling Locally in Sixties

In marketing honey, I manage to sell several tons at a reduced price in five gallon lots or more. By advertising in the local papers, offering honey at 7 cents a pound in five gallon lots, I sell a great deal to people who would otherwise eat corn syrup or sorghum. Disposing of honey in this way makes that much less to flood the market elsewhere, eliminates the bother of shipping and containers, and it is surely better than shipping the honey in large lots at 5 cents, furnishing the cans myself. This leaves little profit.

Moody Brenneman,
Indiana.

—ABJ—

Cerelose

The Corn Products Refining Company, of New York, advertises a product called "Cerelose," a pure dextrose, "one of the most valuable and healthful sugars known to science, directly fermentable by yeast, and with special merit for all types of yeast dough formulas."

This product does what honey will do, but it is standardized. It keeps the product moist, gives a beautiful crust color and is especially adaptable to Parker House rolls, or any roll dough. It can easily be made standard for all bread, coffee cake and roll dough formulas.

Why is it beekeepers are not awake to the need of standardizing honey just as Cerelose is standardized? How can we solve this problem? If we do not solve it, one of our major markets may be taken away from us.

WHY

IT'S SAFER TO BUY OUR

SPECIAL

Loose-Queen Package

1st. A ready-introduced, laying queen, taken from the same colony from which the bees are taken.

2nd. Queen is never "jailed" in the close confinement of a queen cage, but left free and contented among her own bees during shipment.

3rd. Overheating or chilling of queen is prevented, and less cause for anger and agitation among bees.

4th. It eliminates guesswork and mistakes when installing, giving you a foolproof package, no chances to take with queen introduction, and reduces supersedure to a minimum.

Our illustrated booklet tells the story. Ask for it, it's free.

	Special Loose Queen		Regular Caged Queen	
	2-Lb.	3-Lb.	2-Lb.	3-Lb.
UNIT PRICE	$2.60	$3.30	$2.45	$3.15
15 to 49	2.34	2.97	2.21	2.84
50 and Above	2.21	2.80	2.08	2.68

Dealers' discount 15%.—Associations' discount 15%.

THE PUETT CO.
HAHIRA, GEORGIA

QUEENS COOK'S QUALITY ITALIAN QUEENS **75** CENTS EACH

Raised by E. F. Day, formerly of Honoraville, Alabama, who has had twenty years' experience raising queens.

PALM APIARIES .:. LaBELLE, FLORIDA

REDUCED PRICES ON QUEENS

Immediately following our package shipping season ending about May 20th, queen prices will be drastically reduced. Write for this new schedule. You will profit.

DAVIS BROS., COURTLAND, CALIFORNIA

MENTION AMERICAN BEE JOURNAL WHEN WRITING ADVERTISERS

LOOK! LOOK! LOOK!

REDUCED PRICES AFTER MAY 10th

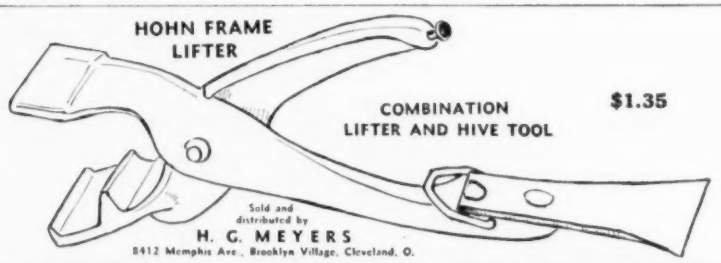
2-Pound Package with Queen . . $2.00
3-Pound Package with Queen . . 2.60
Queens 50

Less Discount of 15% to dealers.

GEO. A. HUMMER & SON, Prairie Point, Miss.

Honey Bee Apiaries
SANDWICH, ILL.

Package Bees, Italian or Caucasians
2-lb. package with queen.....$2.45
3-lb. package with queen..... 3.15
4-lb. package with queen..... 3.85
NOW READY



DISTRIBUTOR OF LEWIS AND DADANT BEEKEEPERS SUPPLIES
Made of Aluminum. Frame will not slip or turn.
Weight 8½ Oz. Postage extra.

Caucasian Bees and Queens

REDUCED PRICE

2-Pound Package with Queen . . . $2.00
3-Pound Package with Queen . . . $2.50
Queens . 60c each. No Discounts.

Safe Arrival and Satisfaction Guaranteed

P. B. SKINNER BEE CO., Greenville, Ala.

Read What Others Are Doing

2 Years $1.50

1 YEAR, $1.00; 3 YEARS, $2.00
(U. S. A. and Canada)

FOREIGN 25c EXTRA FOR POSTAGE PER YEAR

SPECIAL
GLEANINGS IN BEE CULTURE
For 6 Months
STARTING RIGHT WITH BEES
96 Page Book, Illustrated
BOTH FOR 75 CENTS

The A. I. Root Co., Medina, O.

Gleanings in Bee Culture—1 Year
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$1.60 In U. S. A.

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ILLINOIS AND MISSOURI

ST. LOUIS AREA

Complete Stock—Immediate Service
Lewis Beeware
Dadant's Foundation

Beeswax Bought—Cash or Trade

PHIL HANKAMMER HARDWARE CO.
4354 WARNE AVE., ST. LOUIS, MO.

ITALIAN BEES & QUEENS

2-lbs. bees with young queen.....$2.45 ea.
Additional lbs. bees..... .70 ea.
Combless pkgs. or pkgs. with one comb same price.
Additional combs..... .50 ea.
One extra queen with each 20 pkgs. ordered.
5 to 10 pkgs. 10% off; 11 to 25 pkgs. 15% off; 26 to 50 pkgs. 18% off; 51 or more 20% off.

MAYEUX BEE FARM, HAMBURG, LA.

STOUGH'S BRIGHT ITALIANS

I have the stock, equipment and experience to furnish you with hardy, prolific and real honey-gathering Italian bees and queens. Try a few of our large yellow Italian queens and be convinced. Safe arrival and satisfaction guaranteed. Health certificate furnished. All packages F. O. B. Express.

Untested queens 40c each; Tested queens 80c each. 2-lb. pkg. with queen $1.70; 3-lb. pkg. $2.20.

TYRE STOUGH LaPINE, ALA.

BEE SUPPLIES

A. H. RUSCH & SON CO.
REEDSVILLE, WISCONSIN
Manufacturers :: :: :: Jobbers

PACKAGE BEES & QUEENS

Bred for high production. They will be ready when you want them.

R. D. JENKINS
SAN BENITO, TEXAS

CARNIOLANS EXCLUSIVELY

Queen from imported mothers
—Jan Strgar strain

Untested 75c, Tested $1.75. 2 lb. package untested queen $2.50. 3 lb. packages $3.25. Booking orders.

ALLEN'S APIARY, Auburndale, Florida

ADVERTISING PAGES REMOVED

Crop and Market Report

Compiled by M. G. Dadant

For our May Crop and Market report, we asked reporters to answer the following questions:

1. How have bees come through winter?
2. How are honey plant conditions compared to a year ago?
3. What percentage of honey is out of producers' hands?
4. Are jobbing prices stiffening in your section?
5 Have low prices increased honey use?

Wintering of Bees

Bees have come through in remarkably fine condition in practically all sections of the country. Some parts of the intermountain territory including Utah and Nevada, report considerable losses. There have also been some reports of spring dwindling owing to a shortage of young bees, probably induced by the heavy, long season of honey production last year which weakened the queens and didn't allow replenishing of young bees during the fall.

In Georgia, late frosts killed all early pollen and nectar sources, and colonies instead of building up rapidly, in some honey producing sections have been at a standstill. Colonies in Arizona appear to be under par; but in most other sections of the country, except those reported above, conditions are above the normal, we believe.

Honey Plant Conditions

Honey plant conditions in practically all areas are at least the equal of last year. Some exceptions are Georgia, where frost hit, some sections of Alabama and Mississippi, south and west Texas, extending into New Mexico and Arizona. Northern and central California also report conditions much under normal. Also some sections of Indiana and Ohio report very much less clover planting than a year ago, and reports are coming from Minnesota and the Dakotas of many areas where the amount of acreage in sweet clover has been reduced. Some similar reports come from Kansas; but, on the whole, the decidedly favorable moisture conditions have brought plants through satisfactorily. Utah is another state which reports poor honey plant conditions in some sections. Manitoba apparently has less clover than a year ago, but the provinces farther west report 100 per cent.

Honey Sold

The New England States and the entire Atlantic seaboard, extending through the southern states as far west as Texas, apparently have got rid of practically all their honey and report very little difficulty with a carry-over.

Even in New York, Ohio, Indiana, and Illinois, apparently 75 to 80 per cent of the 1938 crop has been sold; and this applies to a great extent to Michigan, Wisconsin and Minnesota.

The plains states seem to be fairly well cleared of their honey but the intermountain territory again is the section in which most of the honey apparently is being held. California reports about 85 to 90 per cent of their honey disposed of, and the Canadian provinces apparently are in a very satisfactory condition.

Naturally, there are many individual beekeepers throughout the entire area who are still holding their honey; and the deplorable fact is that in some intermountain sections, particularly, there has apparently been almost a panic to dispose of honey now that the season is well advanced; whereas it certainly would appear that the prices cannot go any lower and that it would be desirable to hold over if necessary until the fall season, rather than further disturb the market by throwing distressed lots upon it. We learn of one buyer making a somewhat aggressive campaign to take in all the honey he can get at a price of approximately 4 cents to 4½ cents delivered at his station; a few beekeepers apparently desire to take advantage of such an offer.

Is Jobbing Price Stiffening?

There seems to be no indication that the jobbing price on honey is advancing. In fact, during early April, there was a tendency for a reduction in the markets, if anything, owing to the panicky lots mentioned above. Within the past ten days, apparently there has been a slight stiffening in the market although no perceptible advance. Apparently buyers have nearly enough honey to carry them through the present season until new crops come and are not anxious to buy with the market in the condition it now is. Decidedly, there has been a war on in the retail markets to see who could get his honey before the public at the lowest prices; and cutting has been in evidence everywhere, leading more or less to demoralization and naturally to demoralization in honey buying, because every packer has to buy as low as he can in order to compete with his competitors.

Low Prices Increased Use?

Practically all reporters were of the opinion that the low prices have not increased the use of honey materially. Their argument is that low prices are partly caused by lack of demand and, regardless of how low the prices are, the demand will not increase to any great extent. It is true, however, that in the larger cities and in chain store areas, honey, owing to its low price, has been put on as a feature and this has tended to increase its popularity and its use over other sweets. We would say, however, that probably the inability to buy has offset the possible extra demand on account of low prices. Several reporters stated also that the low price has probably induced the use of larger packages of honey, people buying in 10-pound pails rather than in single pound bottles. Another point which has evidently tended to increase the demand has been the very low jobbing price in honey in bulk which has induced many beekeepers to dispose of their crops locally. They have really got out and have made an effort to sell honey and have sold it in their communities in far larger amounts than in previous years. We have a report of one producer having sold 25 tons in rural communities. He probably could have done the same during times when prices were higher, but there was not the inducement to get out and sell that there is now when jobbing prices are almost ruinous.

Summary

It appears that the bees are coming through in excellent condition in spite of the very backward, cold mid-April weather. Honey plants are, if anything, above normal. Honey sales are satisfactory, but prices are not stiffening. There is a larger amount of honey than usual being carried over into the new crop year, although not what we would call a very excessive amount, if beekeepers who can hold will hold their honey rather than further ruin the markets.

WANTED — HONEY
Jewett & Sherman Co.
Milwaukee, Cleveland, Kansas City, Brooklyn

HONEY WANTED Cars and less than cars Mail Samples
C. W. AEPPLER CO., Oconomowoc, Wisconsin

Iverson Honey Company (Not Inc.)
Successors to
Edwin H. Guertin, 201 N. Wells St., Chicago
Extracted Honey bought and sold
Reference: First National Bank of Chicago

The BEEKEEPER'S EXCHANGE

Copy for this department must reach us not later than the fifteenth of each month preceding date of issue. If intended for classified department, it should be so stated when advertisement is sent.

Rates of advertising in this classified department are seven cents per word, including name and address. Minimum ad, ten words.

As a measure of precaution to our readers, we require reference of all new advertisers. To save time, please send the name of your bank and other references with your copy.

Advertisers offering used equipment or bees on combs must guarantee them free from disease, or state exact condition, or furnish certificate of inspection from authorized inspector. Conditions should be stated to insure that buyer is fully informed.

BEES AND QUEENS

PACKAGE BEES, QUEENS, Italians. Highest quality. Booking now for early spring delivery. J. E. Wing, Cottonwood, Calif.

GOLDEN ITALIAN QUEENS producing large beautiful bees solid yellow to tip, untested 75 cents; select $1.00. H. C. White Apiaries, Sandia, Texas.

GOLDEN ITALIAN QUEENS—Golden to the tip, 50 cents. Loehr's Breeding Farm, Caldwell, Texas.

GOLDEN ITALIAN QUEENS of fine quality. They are real honey getters and beautiful to look at. Select untested, 75c each. Carolina Bee Farm, Graham, N. C.

EARLY NUCLEI (Italians), 1 or 2 frames brood, laying queen, 2 lbs. bees. Standard prices, Also full colonies. Inspected. Shipment any time. E. F. Parker, 2415 11th St. North, St. Petersburg, Florida.

REAL PETS—Brown's Stingless Bees. Good honey gatherers, non-swarmers. Season's price $1 a queen; over 10, 90c each. Brown's Apiary, Cape May Court House, N. J.

BEGINNERS BEST BET. High quality Italian queen introduced, one standard comb, 2-pounds bees $2.25; MODIFIED DADANT comb, 2-pounds bees, queen introduced $2.85; extra queens 45c postpaid. EPHARDT'S HONEY FARMS, LULING, LOUISIANA.

"QUEEN LOOSE PACKAGE." ITALIANS 2-pound, queen $1.75; 3-pounds, queen, $2.45; extra queens 45c postpaid. EPHARDT'S HONEY FARMS, LULING, LA.

EXTRA YELLOW Italian Queens that produce bees a little more yellow than the three-banded; more gentle and just as good workers. Untested 75c each, starting early in May. Health certificate and satisfaction. Hazel V. Bonkemeyer, Rt. 2 Randleman, N. C.

BEES 50c per pound. ITALIAN QUEENS 50c each. Only in lots of 100 or more two or three pound packages. James E. Wing, Knights Landing, California.

PACKAGE BEES, QUEENS—High producing northern strain. Satisfaction guaranteed. P. M. Cassady, Davidson, N. C.

3-BANDED ITALIAN Package Bees and Queens. April 1939 delivery. Mansford Plantation, Tallulah, La.

CARNIOLANS, CAUCASIANS, ready April 1st. 2-lb pkg. $2.45; 3-lb. pkg. $3.15. Untested queens 75c each. For large quantities write for special price. 15% discount to dealers. Safe arrival. Satisfaction. Tillery Brothers, Greenville, Ala., Rt. 4, Box 182.

WE ARE CAUCASIAN BEE SPECIALISTS. Write for interesting folder containing prices. CAUCASIAN APIARIES OF CALIFORNIA, RIPON, CALIF.

CAUCASIANS—MILLER BROTHERS, Three Rivers, Texas. Oldest Caucasian breeders west of the Mississippi. Packages with queens introduced. Write for circulars.

QUEENS WITH CHARACTER. They please all. They are reared in honeyflow while the bees are wanting to swarm. They have the pep and price is right. D. P. Green, Rt. 2, Deland, Florida.

PACKAGE BEES AND QUEENS. Service —Satisfaction. Sternenberg Bros., Lockhart, Texas.

PACKAGES WITH QUEEN INTRODUCED prevent supersedure and loss of queens. Free folder tells their advantages over others and how we do it. A. O. Smith, Mount Vernon, Indiana.

GOLDEN QUEENS—excellent quality, carefully reared. Will please the honey producer. 75c each. Satisfaction guaranteed. O. E. Brown, Rt. 1, Asheboro, N. C.

FOR STRONGER COLONIES, Bigger Honey Crops and Gentler Bees try our prolific, well-bred three banded Italians. Used for years by leading beekeepers of the U. S. and Canada. They will satisfy you. We send all new, light, clean and convenient shipping cages; more than full weight of healthy young bees; select young laying queens of our own production; few or no drones, and no disease. 2-lb. packages with queens $2.45 each; 3-lb. packages with queens 3.15 each. Express or mail shipment, f. o. b. here. Select young laying queens 75c each postpaid. Our shipping season opens April 10th. Capacity 100 packages and queens daily. Order early and have your shipping date reserved. H. C. Short, Fitzpatrick, Ala.

FOR A GOOD HONEY CROP try our Three-Banded Italians. Alamance Bee Company, Graham, N. C.

HONEY FOR SALE

HONEY FOR SALE—We buy and sell all kinds, carloads and less. The John G. Paton Company Inc. 630 Fifth Avenue, New York, N. Y.

EXTRA WHITE and light amber extracted honey in 60's. F. J. Smith, Castalia, Ohio.

CHOICE EXTRACTED CLOVER HONEY in 60's. R. C. Bish, Successor to Moore Apiaries, Tiffin, Ohio.

FANCY WHITE TUPELO HONEY—The best ever and guaranteed non-granulating. Also light amber honey at bargain prices. Fred Hoffman, Apalachicola, Florida.

FOR SALE—Extracted all grades. 22 cases Comb at a bargain. N. B. Querin, Bellevue, Ohio.

FINE CLOVER HONEY by the truck load 5½c lb. Edw. Klein, Gurnee, Illinois.

FOR SALE—Finest white clover honey at wholesale prices. Jos. H. Hoehn & Sons, Ottoville, Ohio.

FANCY TUPELO and light amber honey for sale, barrels and 60's. Marks Tupelo Honey Co., Apalachicola, Florida.

NO. 1 WHITE CLOVER Comb Honey in window cartons, 25 to 26 pounds to the case of 24. Price $2.75 per case. Cooke Bros., Pecatonica, Ill.

COMB HONEY—Fancy white clover $2.75 per case; fancy mixed or amber or buckwheat $2.00. White clover extracted 6½c; buckwheat 5c; amber 5½c; C. B. Howard, Geneva, N. Y.

HONEY—Clover and buckwheat, extracted. Geo. Sowarby, Cato, N. Y.

FINEST EXTRACTED CLOVER and Buckwheat honey in any quantity. Sample 15c. F. W. Summerfield, Grand Rapids, Ohio.

REDUCED prices on comb and extracted Write H. G. Quirin, Bellevue, Ohio.

COMPLETE LINE comb and bottled honey. Pure clover. Also packed in 5's and 60's. Central Ohio Apiaries, Inc., Millersport, Ohio.

SUPERB CLOVER HONEY, extracted. Priced to sell. C. J. Baldridge, Romulus, New York.

FOR SALE—Fancy Iowa white clover extracted honey. Kalona Honey Co., Kalona, Iowa.

ORANGE, Palmetto and Mangrove honey in new sixties. Peter W. Sowinski, Fort Pierce, Florida.

FOR SALE—Northern white extracted and comb honey.
M. W. Cousineau, Moorhead, Minn.

HONEY PACKERS—Write us for prices on carload lots of California and Western Honeys. We stock all varieties. HAMILTON & COMPANY, 1360 Produce Street, Los Angeles, California.

WE BUY AND SELL ALL KINDS COMB AND EXTRACTED, CARLOADS AND LESS. H. BLITZ, P. O. BOX 3452, PHILADELPHIA, PA.

CHOICE Michigan Clover Honey. New 60's. David Running, Filion, Michigan.

HONEY FOR SALE—All kinds, any quantity. H. & S. Honey and Wax Company, Inc., 265-267 Greenwich Street, New York.

FOR SALE—Fancy, well ripened, white sweet clover honey in 60-lb. cans. Extra good quality. Dadant & Sons, Hamilton, Ill.

FOR SALE—Honey by the carload. Imperial Valley Beekeepers Association, 847 Heber Avenue, Calexico, California.

HOWDY'S HONEY—Fine quality white, clover, also buckwheat and light amber mixed, extracted in new sixties. White, clover Honey Hunks. Howard Potter, Ithaca, Mich.

HONEY FOR SALE—Any quantity, all varieties. B-Z-B Honey Company, Alhambra, California.

HONEY AND BEESWAX WANTED

WANTED—Extracted honey, car lots or less. Send sample with lowest delivered price. Schultz Honey Farms, Ripon, Wis.

ALL GRADES extracted honey wanted. Bee supplies and honey containers for sale. Prairie View Apiaries, 12213 12th Street, Detroit, Michigan.

WANTED—Carlots honey; also beeswax, any quantity. Mail samples, state quantity and price. Bryant & Cookinham, Inc., Los Angeles, California.

WANTED—White and Amber Extracted Honey, any quantity; also beeswax. Write THE FRED W. MUTH CO., Pearl and Walnut Sts., Cincinnati, Ohio.

FOR SALE

MUST SELL 42 colonies bees, disease free. Make offer. Mrs. W. M. Brown, Jefferson, Iowa.

100 to 500 colonies bees. Good equipment, good locations, Write L. C. McCarty, 1524 Franklin, Boise, Idaho.

FOR SALE—12 inch Root Foundation Mill. hexagonal cell, in perfect condition. Thos. Broderick, Moravia, N. Y.

FOR SALE OR TRADE—600 comb beeway supers with fixtures. A1 condition, clean. Edward Candler, Cassville, Wisconsin.

WANTED

HELP WANTED—Manager for rapidly growing honey and preserve business; thoroughly familiar with production and some sales experience. Write Box J. W., c/o American Bee Journal.

WANTED—A place to work as gardener, and work with bees. Address Chas. Kralik, c/o H. M. Leach, Hiram, Ohio.

WANT TO DISPOSE of Gun, Camera, Flower Bulbs, Books, or other material —or for trade? American Bee Journal Classified advertisements will give you good results, and cost only seven cents per word, per issue.

SUPPLIES

READY WIRED FRAMES—Scientifically correct wiring results in perfect combs, reduces swarming 75%. Literature free, sample 10c. A. E. Wolkow, Hartford, Wis.

QUAINT OLD-TIME STRAW BEEHIVES. Photos free. G. Korn, Berrien Springs, Michigan.

SPECIAL CHUNK HONEY FRAMES with wide end and bottom bars carried in stock. Send 5c for sample and ask for prices on quantity desired. Not listed in 1939 catalog. Walter T. Kelley Co., Paducah, Ky.

YOUR WAX WORKED into medium brood foundation for 15c pound; 100 pounds $11.00; thin super 22c. Medium brood foundation 10 pounds $4.00. Fred Peterson, Alden, Iowa.

THE PINARD nailless queen bee shipping cage. Send for sample. Agents—Diamond Match Co., Chico, Cal.; Weaver Apiaries, Navasota, Texas. A. B. Pinard, Manufacturer, 810 Auzerais, San Jose, California.

COMB FOUNDATION at money-saving prices. Plain, wired, and thin section. Wax worked at lowest rates. Combs and cappings rendered. E. S. Robinson, Mayville, N. Y.

LEWIS BEE SUPPLIES, Dadant Wired Foundation. Prompt shipment from large stock. Simeon B. Beiler, Authorized Distributor, Intercourse, Pa.

ECKHARDT QUEEN BEE MARKER—Now available in United States and Canada. Literature on request. Lee B. Trawatha, Wiloughby, Ohio, Sole Representative.

WRITE FOR CATALOGUE. Quality bee supplies at factory prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Onsted, Michigan.

ATTRACTIVE PRICES on bee supplies and comb foundation. Send for catalog. Saves you money. THE FRED W. MUTH CO., Pearl and Walnut Sts., Cincinnati, Ohio.

$11.00 is our price for working 100 pounds of your wax into medium brood. Our large modern bee hive factory is manned by experienced workers milling thousands of pounds of comb foundation and hundreds of thousands of board feet of lumber into beehives annually. Quality at Low Cost is our motto. Free catalogue. Free shipping tags for your wax. The Walter T. Kelley Co., Paducah, Kentucky.

DIFFERENT, that's all. Written and published for the instruction of beekeepers. 52 pages of breezy entertaining beekeeping comment each month. One year, $1.00; two years, $1.50. Sample, 3c stamp.
The Beekeepers Item, San Antonio, Texas.

DAIRY GOATS

LEARN ABOUT DAIRY GOATS—Monthly magazine $1 yearly; sample copy and information free. Dairy Goat Journal, Dept. 901, Fairbury, Nebr.

BOOKS

"HISTORY OF AMERICAN BEEKEEPING," by Frank Pellett, covers a field which has been neglected until now. Ralph Benton in the "Frontier" says: "A great work presented at a timely moment. We wish there might be some way to place this book in the hands of every beeman." Nicely printed, well illustrated, large pages. $2.50 prepaid. American Bee Journal, Hamilton, Illinois.

TRADE

TRADE FOR BEES, Homing Pigeons, Partridge, Cochin Bantam Roosters, men's clothing, 500 new 4x5x1⅜ sections split on one end, World War steroscope library, 100 views. E. A. Rahn, Taylor Ridge, Illinois.

MISCELLANEOUS

BRANDING IRONS made to order. John Conner, Route No. 2, Caldwell, New Jersey.

9 BASSWOOD SEEDLINGS 2 foot, or 6 Pink Honeysuckle bushes 10 inch, or 35 Caragana hedging (Siberian Pea tree) 12 inch, or 50 Caragana (Siberian Pea) 10 inch, for $1 postpaid—nectar producers. Lewis-Dadant Dealers for this territory Nicollet County Nursery, St. Peter, Minnesota.

WATCH MICHIGAN! Read Michigan Beekeeper. One year 50c. Published bimonthly at 406 E. Joseph St., Lansing, Michigan. Sample copy—3c stamp.

IN THE MID-WEST it's Inland Poultry Journal, one year 25 cents, three years 50 cents. Printcraft Bldg., Indianapolis, Indiana.

THE BEE WORLD—The leading bee journal in Great Britain and the only international bee review in existence. Specializes in the world's news in both science and practice of apiculture. Specimen copy, post free, 12 cents, stamps. Membership of the Club, including subscription to the paper, 10/6. The Apis Club, The Way's End, Foxton, Royston, Herts. England.

CARTONS for Cut Comb Honey. New attractive designs with your name and address. Low prices. Fast service. Samples on request. May Carton Co., Box 257, Traverse City, Mich.

JES DALTON has been granted a hearing by the U. S. Dept. of Agriculture on exempting or discontinuing the Package Bee Marketing Agreement and wants to get in touch at once with every shipper who is opposed to this agreement.

Jes Dalton, Kenner La.

Sainfoin

Various comments on sainfoin have questioned why the plant is not more widely grown and have implied that it will not succeed in the United States. At one time it was my privilege to serve as agronomist for the experiment station at the University of Idaho, at Moscow. Around the seed house and on the premises were two legumes strange to me when I went there. One was berseem, the Egyptian clover, the seed of which is used by importers to adulterate red clover seed. It was rather recumbent and was not considered to be of any value as a forage plant. It grew at the drop of a hat and had ample flowers, but at that time there were no bees at Moscow to test its value as a nectar yielder.

The other legume was sainfoin. Quite a lot of it was growing around the seed house. I learned that the government had sent the seed there for testing purposes and that it had been given an adverse report, because the plant grew to be long and scraggly and was more or less inclined to be recumbent. It just did not make the dense, fine-leaved growth of alfalfa.

The climate of Moscow is very moist during the fall, winter, and spring; but in July, August, and September it is exceedingly dry. This is apparently what sainfoin likes. It should never be planted on low, wet ground, as it roots very deeply. Hence it is not affected by drought.

Sainfoin would find more favor if it were always sown thickly so that the stems would become short and upright in their struggle for light. But it will grow anywhere on the wind-blown soils of the Palouse country and Columbia River Basin, and I am sure it will grow on the Missouri River hills if it is inoculated and 200 pounds of superphosphate drilled in with it. The seeds are large, thin, and kidney-shaped—quite like a bean. About 35 or 40 pounds of seed should be sown to the acre, as the seed is one of those oily kinds whose germinating power becomes almost nil the second season.

L. F. Childers,
Missouri.

—ABJ—

Wisconsin in Fight to Eradicate American Foulbrood

E. L. Chambers, state entomologist of the Wisconsin Department of Agriculture and Markets, in a recent warning to state farmers urged them to "beware of bees at spring farm sales unless they are accompanied by a state inspection permit giving them a clean bill of health."

Reports are frequently received, he warned, where purchasers find later in the season that they have been "stung" because the colonies are infected with American foulbrood.

Seconding the warning was G. F. Massey, new Fond du Lac county agent. He emphasized: "The practice of buying bees at public auction sales has its disadvantages because such colonies are likely to have been neglected; the equipment is often of medium quality; the combs are too often crossed; the queens are usually old and need replacing; and colonies may have gone into winter with less than the required amount of stores, so that when spring comes, the nest that can be obtained is a small group of bees with an old queen that needs feeding and probably transferring."

State Entomologist Chambers, Massey asserted, pointed out that bee auction sales usually take place so early in the season that it is impractical to move the bees without almost certain death. If it is necessary to buy such bees, Chambers added, "they should be bought definitely on the basis of freedom from disease or subject to their being found so at the first possible inspection."

State auctioneers have been autioned, Chambers averred, that it is illegal to offer bees or used bee equipment for sale unless it has been certified free from dangerous bee diseases.

Everett K. Melvin,
Wisconsin.

LAST CALL

Get your order in before it is too late. We can still supply PACKAGE BEES with those SUPERIOR Queens of IMPORTED strain. You will be surprised at the better results obtained both in honey gathering and wintering. Try them this season in either the LOOSE QUEEN package or Nucleus. QUEENS reared on honey only.

2-lb. with queen	$2.45
3-lb. with queen	3.15
1 frame, 2-lb nucleus	2.60
1 frame, 3-lb. nucleus	3.30

No extra charge for clipping or LOOSE (introduced) QUEEN

Discounts

$1 to $50	Net
$50 to $100	5%
$100 to $250	10%
$250 to $500	15%
$500 to $1000	20%
$1000 up	25%

J. G. Rossman, Moultrie, Ga E. W. Long, Conover, Ohio

Rossman & Long

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Profit Making Helps

Dadant's Surplus and Plain Foundations

Dadant's Crimp-wired Foundation

Made of pure beeswax these foundations are accepted by bees readily and make combs that are really combs. Use them next time.

DADANT & SONS

HAMILTON, ∴ ILLINOIS

Why Pay More

when you can secure better quality at a lower cost

No. of Pkgs.	2-lb. Pkg. with Queen	3-lb. Pkg. with Queen
1- 10	$2.25	$2.90
10- 50	2.00	2.60
50-100	1.90	2.50
100-500	1.80	2.40
500 and up	1.75	2.35

Price of Queens

1- 25	$ .75
25-100	.70
100 and up	.65

All prices of package bees are at shipping point. Our terms are 10% with order, balance before shipment.

BANTA & WIRE

LOS MOLINOS, CALIF.

An Easily Managed Home For Your Bees

A good hive has all the room the queen needs and also room for food and young. Often over 100,000 cells are needed at one time. No hive but the Modified Dadant gives this room in one compact body. It produces big colonies and big crops.

Send for this sixteen page booklet telling how the Modified Dadant Hive is used by successful honey producers.

Dadant & Sons Hamilton, Ill.

Leather Colored Italian

PACKAGE BEES & QUEENS

May 10th or later delivery

2-lb. package and queen...$1.75
3-lb. package and queen... 2.25
Young laying queens..... .50

Overweight in young bees.

Every guarantee pertaining to package bees and queens.

Gooch Apiaries, Farmersville, Texas

Modified Dadant Hives

For
CANADIAN BEEKEEPERS
at
UNITED STATES PRICES
Order from

S. P. Hodgson & Sons

New Westminster, British Columbia, Canada

HELLO FOLKS!

Here we are again

STEVENSON'S LINE BRED GOLDENS

Some say Goldens are no good. Their trouble is they've never had Goldens, but some other yellow bee. We stand the test with the very best and win. Our being so gentle makes your work pleasant. We fill the hive then swarm. The queens are large, uniform, strong and prolific.

You won't go wrong if you heed our song and order us from

STEVENSONS APIARIES, Westwego, La.

1 to 9—2-lb. with queen $2.45; 3-lb. $3.15
10 to 49—2-lb. with queen 2.25; 3-lb. 2.90
50 to 99—2-lb. with queen 2.10; 3-lb. 2.75
100 and over—2-lb. 2.00; 3-lb. 2.65
Queens, 75c

Discount to dealers and associations to 100 15%, over 100 20% on unit price

PIGEONS

If you are interested in Pigeons, you need the AMERICAN PIGEON JOURNAL, an informational instructive 36-page monthly magazine. Sample 15c; 12 months $1; three years $2.

AMERICAN PIGEON JOURNAL
Dept. B Warrenton, Mo.

MACK'S QUEENS (THEY SPEAK FOR THEMSELVES)

Big, Vigorous, Hardy Northern Bred Italians that have to make good or MACK does. Hundreds of satisfied customers all over U. S. A. have written us as to their superiority. You won't go wrong when you use MACK'S Queens.

Prices during May.....75c each
After June 1st.....50c each
15% discount to dealers and Beekeepers Associations

HERMAN McCONNELL
(The Bee and Honey Man) Route 2, Robinson, Ill.

LOOSE QUEEN PACKAGES

2-lbs. with queen.....$2.45
3-lbs. with queen.....3.15
Safe arrival, satisfaction guaranteed, prompt shipments, our motto.

TAYLOR APIARIES, Luverne, Alabama

We Offer You--

Good strains of honey producing bees.
Good queens, produced by careful men of long experience.
Packages well filled with young bees. No drones.
Service that is the best. Plenty of experienced dependable help.
Express that is fast over direct lines to the North, East or West.

ITALIANS-CAUCASIANS

2-lb. package with queen.....$2.45 each
3-lb. package with queen..... 3.15 each
Queens, select laying..... .75 each

Discounts—10 to 49, 10%; 50 and up 15%. Write for nuclei prices.

WEAVER APIARIES

NAVASOTA, TEXAS

BUSY BEE BRAND

FOUNDATION

Our best grade nonsag at **35 cents** per pound for 500 pounds or more; **40 cents** per pound for less than 500 pound lots; **45 cents** per pound for less than 100 pound lots. Thin super grades **5 cents** per pound additional.

Superior to some. Inferior to none. Sample free.

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WEST ELKTON, OHIO SYLVESTER, GEORGIA

Gaspard's

Quality Golden and Three-Banded Queens, Package Bees and Nuclei for Spring 1939 Delivery

Comb Packages with Queens

2-lb. package with queen, one frame of brood each.....$2.45
3-lb. package with queen, one frame of brood each..... 3.15
4-lb. package with queen, one frame of brood each..... 3.85
5-lb. package with queen, one frame of brood each..... 4.55

2-lb. package with queen, two frames of brood each..... 3.05
3-lb. package with queen, two frames of brood each..... 3.65
4-lb. package with queen, two frames of brood each..... 4.25
5-lb. package with queen, two frames of brood each..... 4.85

Combless Packages with Queens

2-lb. package with queen, each.....$2.45
3-lb. package with queen, each..... 3.15
4-lb. package with queen each..... 3.85
5-lb. package with queen, each..... 4.55

Untested queens **75 cents** each. Tested queens **$1.50** each. For queenless packages deduct price of queen.

Twenty years' experience, prompt service, satisfaction guaranteed, health certificate. Discount—5-9 packages, 5%; 10-24, 10%; 25-49, 15%; 50-99, 20%; 100 or more, 25%.

J. L. GASPARD, Hessmer, La.

When Writing Advertisers, Please Tell Them You Read It in A-B-J.

The Postscript

Gossip About the Office in the Making of the Magazine

A Nebraska reader inquires how far it is safe to go with the inbreeding of bees. This is an interesting question and one to which many of our queen breeders would like to know the answer. A certain amount of line breeding appears to be necessary to establish desired characters. It is doubtful if enough is yet known about the inheritance in honeybees to make any very positive statement in answer to our correspondent's question.

———ABJ———

Carl M. Teasley, of Ooltewah, Tennessee, sends another of his interesting notes. This time he reports that on January 20, 1937, he found the bees literally swarming on the cedar trees, to the extent that a continued puff of yellow dust descended from the trees. This continued for about a week. He raises the question as to what value such trees as cedar and pine may be for pollen.

———ABJ———

Teasley has observed the worker bee apparently cleaning her tongue with front legs when changing from one chickweed blossom to another. Later he has observed similar action with numerous other kinds of flowers and has wondered at the significance of the action. He asks whether it is to insure cleanliness or for what?

———ABJ———

It seems a bit strange that we should spend so much effort trying to grow plants from regions so different that they refused to prosper with us, when there are wild plants which do much better. The golden cleome mentioned before on this page is native to our own West, from Nebraska and Colorado to California and Washington. In our garden it made a wonderful show and the bees fairly reveled in its blossoms. The mention that Melvin would send seed brought so many replies that it was all gone within a short time. One wonders why it had never been brought to public attention before.

———ABJ———

I have read with much interest a communication from a man who is very tired of office work and anxious to take up beekeeping. He has but little money and wants suggestions as to how he can establish himself and pay for an outfit from the proceeds of his new venture. Considering the difficulties of established beekeepers in recent months, it would seem to be a hard problem to start on borrowed capital and earn both a living and repay the capital investment.

Has any reader an idea as to how it can be done?

———ABJ———

The C. C. C. camp at Denison, Iowa, seems to be making a real success with the beekeeping project. Some of the men secured as high as 200 pounds of honey per colony last year. The interest appears to be well maintained and the men are taught right methods of honey productions. They call on State Apiarist Paddock for instruction at frequent intervals and the results obtained are likely to be noticed at other camps where conditions are favorable for beekeeping.

———ABJ———

The wife of an Iowa beekeeper writes that her husband is very ill and unable to care for the bees and asks whether she could realize a fair price for them at an auction sale. As a rule bees sell at a very low price at auction in a farming community. If there happens to be only one or two persons interested they are able to buy at a very low figure for lack of competition in bidding. A safer plan is to advertise them for sale in the columns of the bee magazines.

Dr. R. L. Parker, of the Kansas State College, calls attention to a new clover for the black lands of the South, **Trifolium lappaceum,** recently described by Dr. D. G. Sturkie in the Journal of the American Society of Agronomy. There is unusual interest in new farm crops due to the economic changes in agriculture.

———ABJ———

We have not yet been able to learn for sure which is the oldest organization of beekeepers in this country. The Beekeepers Exchange, in its issue of January 1882, reported the sixteenth annual convention of the Michigan Beekeepers Society held in December, 1881, and stated that it was one of the oldest in the country. If the present organization has continued since that time it is doubtful whether any other can show a longer lease of life.

———ABJ———

In 1882 E. E. Hasty, of Lucas County, Ohio, had a honey plant garden. In the Exchange for May, 1883, he told of some of his efforts to secure a red clover with short corolla tube. Finding one plant with a pure white flower he tried for several years to establish a strain of red clover with white blossoms but most of the plants reverted to the normal red flowers and at the end of the fourth year he only had two with white flowers. With the recent effort to establish a strain of red clover with white blossoms by a Wisconsin beekeeper and our own attempt to get one with short flower tubes we are reminded of the old saying that there is nothing new under the sun.

———ABJ———

Otto Schultz, of Hollister, California, writes an interesting account of his visits with W. B. Dickensen, who will be remembered as the former manager of the apiary department of the Diamond Match Company. Since retirement Mr. Dickensen has been living quietly on a ranch in San Benito County, California, where he is engaged in apple orcharding. Through his former work Dickensen made a wide acquaintance among the beemen, many of whom will be interested to know of his present occupation as a fruit grower.

———ABJ———

We expect to have a number of new forage crops under test in small plots in our honey plant test garden this season. Later we hope to be able to report to our readers on the promise of these crops under midwest conditions. From the numerous things planted thus far there are only two which we feel confident are worthy of general planting in this region.

———ABJ———

A Michigan beekeeper, Robert F. Wittbecker, of Scottville, writes that he has forty acres which vary from low swampy land to typical Michigan sand dunes which he intends to turn into bee pasture. With a little care in selecting the plants one can add substantially to his bee pasture with forty acres of land. I have long wished for an extensive area to devote to experimental planting of honey plants on a much larger scale than is possible with the small plots available in our test garden. Mr. Wittbecker's project offers very interesting possibilities.

———ABJ———

With the temperature down to eighteen above zero on April 12, conditions are not very favorable for either gardening or beekeeping thus far this spring. Our midwest spring weather is usually very trying and this year perhaps a bit more than average.

FRANK PELLETT.